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Price Changes Confuse Market

Pittsburgh Base Abandoned by Steel Corporation and by Independents, Succeeded by Mill or Delivered Prices—Various Mill Bases Established On Wire Products and Tubular Goods—New Buying Hesitates—Some Good Tonnages Out

GENERAL uncertainty and confusion have marked the first few days of readjustment of the steel market to the new conditions created by the expressed agreement of the Steel corporation to abandon the Pittsburgh plus system of determining steel prices in accordance with the cease-and-desist order issued by the federal trade commission. Independent mills generally show a desire to conform to the revised methods of quoting but are moving deliberately waiting for the Steel corporation subsidiaries to point the way. New buying has been under restraint but has kept up surprisingly well considering the absence of definite information as to settled prices.

In such modification of the price system as has been put into effect, the controlling principle appears to be that material is to be sold where made, plus the actual cost of delivery to the point where it is to be used. The application of this rule by various Steel corporation units is resulting in the establishment of a number of different mill bases, including Pittsburgh, in certain products, and in other lines, the quoting of delivered prices to consumers. These delivered prices have figured back to practically the same Pittsburgh equivalent as prevailed recently when the Pittsburgh base was quoted. This suggests that the dominating influence of the Pittsburgh district upon the market because of its large capacity and competitive power, is not likely to be lessened under the altered conditions of quoting.

The effect of the naming of mill or delivered prices, it is believed, will tend to localize markets and competition. Such a situation would be favorable to the Steel corporation because of its numerous and well distributed plants. Already there is considerable comment that the trade commission's order may turn out to be of material benefit, in a competitive way, to the largest producer.

Saving Not Large

So far consumers have not enjoyed any material reduction of prevailing market prices by the elimination of Pittsburgh base. This is especially true of users in the Chicago and tributary districts, from which the greatest pressure against Pittsburgh plus was exerted. This is due to the fact that plates, shapes and bars have been on a Chicago base since 1921 and cold-finished steel more recently. Probably 80 per cent of the steel consumption in the Chicago district is not affected.

New Bases Fixed

In wire products and in tubular goods, however, some important changes have been established by Steel corporation mills. Cleveland has been made a base on wire products equally with Pittsburgh while shipments from three western mill points are put at a differential $2 per ton higher and from New England, $3 higher. For Chicago delivery $3 over the Pittsburgh-Cleveland base is quoted. At the same time base prices on wire have been reduced $1. This makes a total saving to Chicago territory of $4.80 per ton and to Cleveland of $3 with a corresponding change in New England. In tubular products, the National Tube Co. is naming the same basing discounts at Lorain, O., as at Pittsburgh. The modifications in sheets have not yet been finally determined.

Standard and light rails, reinforcing bars, spikes and some other products customarily have been sold on a mill basis and are not affected.

The small change in the general price situation is reflected by IRON TRADE REVIEW composite of fourteen leading iron and steel products which has receded only from $38.95 to $38.87 in the week.

Tonnage Is Appearing

The largest new business in steel still relates to railroad requirements. Chicago mills the past week booked over 90,000 tons of car material. The Burlington and the Santa Fe are understood to be coming out for 7500 cars. The New York Central rail inquiry now definitely issued calls for 150,000 tons with an option on 30,000 tons, additional.

An inquiry for 19,000 tons of reinforcing bars for the Cleveland union station has attracted interest. Deliveries are to be spread over five years, however. Over 50 new structural steel awards are reported this week totaling 21,684 tons with an equal number of new projects involving 53,875 tons.

The pig iron market is quieter, lacks buoyancy and some attractive orders are able to induce concessions.

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Structural Steel Uses Growing

THE great increase in the use of steel for modern structural purposes of various kinds is impressed forcibly on the mind sometimes by the progress made in certain branches of the construction industry. The amount of steel used for building last year was greater than that for any other classification, approximating 15.77 per cent of the total.

Yankee stadium, New York, built of reinforced concrete. Page 795

In 1922 the proportion was 13.50 per cent as shown by Iron Trade Review compilation. With general construction this year slightly ahead of that of 1923, the year's record is likely to show a continuation of the increase in the use of steel for such purposes. Within this department, some remarkable consumption records may be cited, as in the case of steel used in reinforced concrete construction. The article on page 795 shows that within 20 years the use of steel in this line advanced from an insignificant figure to 680,000 tons, in 1923.

Cross Sections of Industry—

"Electric arc welding has become a standardized production tool in fabricating certain piping equipment."—*From IRON TRADE REVIEW'S Survey, "Electric Arc Welding."*

Pig Iron Trading Quieter—Part of 6900-Ton Order Closed Below $19.50, Valley—Basic Dips Under $19

PITTSBURGH, Sept. 23.—The week's activity in the pig iron market, in the aggregate is large, though individual orders are small, except that of the American Brake Shoe & Foundry Co. The company is understood to have divided 6950 tons between a Cleveland interest and a valley merchant furnace, the latter taking a portion of 2400 tons for the Pittsburgh plants below $19.50, valley. One merchant interest booked miscellaneous orders of 200 to 500 tons, aggregating 15,000 tons of various grades of foundry iron in the past week or so, on a rising price scale up to $19.50, valley base. Another merchant interest still is quoting that figure but made no sale in the past week. A third may go to $19.50 on a sufficiently large inquiry. Several others are maintaining $20, valley, without sales. The Westinghouse Electric & Mfg. Co. wants 100 tons of bessemer iron. A local broker desires a price on 700 tons. Twenty dollars, valley, still is the quotable market on this grade. Several small sales are noted. At least two interests are quoting $21 without sales. The Follansbee Bros. Co. bought 2000 tons of basic below $19, valley base. It is understood to have closed with a Pennsylvania furnace having a $1.13 freight rate, against a valley rate of $1.89 to Follansbee, W. Va. One valley steelmaker quoted $19, valley, on this inquiry. Others quoted $19.50. No basic inquiries now are current, a fair sprinkling of small sales of low phosphorus iron and charcoaol iron is noted.

Sales At Low Point

Boston, Sept. 23.—The pig iron market in New England continues to mark time. Prices have shown little change in four or five weeks and sales with one or two exceptions have been insufficient to offer a real test to the market. During the past week a New Hampshire consumer took 300 tons and scattered lots of 100 and 200 tons brought the total in the district to between 3000 and 4000 tons. Buffalo prices for No. 2X iron (2.25 to 2.75 silicon) range from $19.50 to $20, and small sales at these levels have been made during the week. In eastern Pennsylvania small tonnages of No. 2X iron have been placed at $21, but it is probable that $20.50 would be reached on strictly competitive bidding, and for round tonnage as low as $20 might be looked for. Some dealers feel there is a firmer tone to prices now than a week ago especially on the higher silicon irons. A lot of 3.25 to 3.75 silicon iron was placed at $22, eastern Pennsylvania, which means $25.65 delivered. Scattered sales of Birmingham iron are reported at $17.50 to $18, furnace, which figures $24.41 to $24.91, delivered Boston. Inquiry includes 1000 tons for a Massachusetts melter.

Eastern Sales Firm; Prices Fair

New York, Sept. 23.—A fair amount of activity continues to be reflected in the pig iron market here. Purchases in this territory during the past week aggregated about 25,000 tons, of which more than 15,000 tons is for consumption in this district. Included in the business were 4000 tons which the American Brake Shoe & Foundry Co. purchased for its southern plants. Another buyer is the American Locomotive Co., which is understood to have taken about 4000 tons. The General Electric Co. is expected to place about 4000 tons for Lynn, Pittsfield, Schenectady and Bayway, N. J., within the next few days. The New York Central is in the market for about 750 tons of foundry iron and 50 tons of charcoal iron. The Gould Coupler Co. is in quiring for about 2000 tons of malleable. Several smaller inquiries are out. Prices are firmer. The Buffalo foundry market is $19 to $19.50 base furnace although the full differentials on the silicons are not always maintained. On eastern Pennsylvania foundry iron the market continues $20 to $20.50, base furnace. The market on Lake Superior charcoal iron continues $26, furnace. This is equivalent to $32.56 delivered at Newark, N. J. There is some talk about the possibility of bringing in German iron but at present the only foreign iron sold here in any appreciable tonnages is Indian and Dutch foundry iron.

Good Tonnages Closed

Philadelphia, Sept. 23.—Substantial business is noted in steelmaking and foundry iron in this district, but some of the largest transactions are kept under cover. Sales indicate no change in prices. Eastern foundry continues $20 to $20.50, base furnace. Basic is $20, delivered. Fully 1500 tons of domestic low phosphorus iron has been sold. Prices are unchanged, an eastern consumer claims he bought a round tonnage of English copper-free, low phosphorus iron at $25.50, duty paid tidewater. It is reported over 6000 tons of iron for the Pennsylvania railroad, fourth quarter, was distributed among three makers. Considerable pipe iron is expected to be placed shortly.

Market Improving Gradually

Buffalo, Sept. 23.—Demand for pig iron is showing gradual improvement. Inquiry last week totaled slightly more than 10,000 tons, and included some makers of railway equipment who have not been purchasers for some time. The largest lot was 2100 tons of foundry iron. Sales kept pace with inquiry. The market seems to be gaining strength, but there are reports that prices have been shaded slightly on some of the larger lots. Merchant furnaces here quote: No. 2 plain, $19.50; No. 2 X, $20; No. 1 X, $21; and $21.50 on iron of more than 3.25 per cent silicon.

Sales Are Smaller

Cincinnati, O., Sept. 23.—Pig iron sales in the past week aggregated about 7000 tons. Inquiry is smaller and the total does not exceed 2500 tons. Northern foundry iron is quoted at $20, Irontor base, although concessions from this level may be had on sizable lots. Southern iron continues to range from $17.50 to $18, Birmingham base. The largest transaction of the week involved 500 tons of northern iron and a like tonnage of southern iron for shipment to the Indianapolis Stove Works, Indianapolis. The American Car & Foundry Co., Huntington, W. Va., bought 500 tons of northern iron from a southern Ohio furnace for last quarter. A sale of 300 tons of northern iron to the National Cash Register Co., Dayton, also is noted, while the Modern Foundry Co., Cincinnati, bought 100 tons of foundry iron from a Cleveland interest. A leading seller reports the sale of 2400 tons of northern and southern iron in various lots. The Monitor Furnace Co., Cincinnati, is inquiring for 300 tons of northern iron, while a melter at Kokomo, Ind., wants 1500 tons of malleable iron for last and first quarter delivery. In most cases, southern Ohio furnaces will not

accept first quarter business at present prices. The Portsmouth furnace of the Wheeling Steel Corp. is again in blast.

More Sales for First Quarter

Cleveland, Sept. 23.—More sales of pig iron for the first quarter are in evidence, in a quiet market. Some sellers who heretofore declined to quote have taken moderate size lots at current prices, and in one or two instances slightly higher has been obtained. A price of $20.25, base furnace, applied on 500 tons for the first quarter. Another lake furnace numbers among its sales of the week several for the first quarter, including one for 3000 tons. A rather mixed weeks ago purchased around 12,000 tons of basic for last quarter, last week re-entered the market and closed for several thousand additional tons. This is the only activity in the basic market. The price is held at $19 to $19.50, valley. One Cleveland furnace is asking $20, furnace.

Southern Sales Small

Birmingham, Ala., Sept. 22.—Numerous sales of pig iron are reported by furnace interests in Alabama practically all in small lots. The little total exceeds current output. Quotations usually range between $18 and $18.50 for No. 2 foundry, 1.75 to 2.25 silicon the smaller furnace companies asking pending. One maker is quoting $21, furnace on northern malleable and foundry iron. Practically all current business is at $20.50, base but this level is strong. Three merchants stacks now are active, against the low point of one a month ago. A fourth stack is to be blown in within a week. An inquiry is out for 400 tons of low phosphorus iron for last quarter. Another inquiry calls for a carload of 15 per cent silvery iron. Birmingham iron is $17.50 to $18 base. The sale of two cars is noted.

Some Shading at St. Louis

St. Louis, Sept. 22.—While prices asked by producers remain unchanged, there is a weaker feeling in pig iron,

Prices Present and Past

Representative market figures yesterday, and for last month, three months ago and one year ago

	Sept. 24, 1924	Aug., 1924	June, 1924	Sept., 1923
PIG IRON				
Bessemer valley del., Pitts....	$21.76	21.76	23.26	28.27
Basic, valley	19.00	19.00	20.00	25.00
Basic, eastern del., eastern Pa.	20.00	20.00	20.60	25.10
*No. 2 foundry, del. Pitts.....	21.26	21.01	21.26	26.52
No. 2 foundry, Chicago	20.50	20.40	21.40	26.75
*Southern No. 2, Birmingham..	17.50	17.90	20.00	22.75
*Southern Ohio, No. 2, Ironton	20.00	19.75	20.25	24.90
**No. 2X, Virginia furnace....	24.50	24.50	25.50	25.50
**No. 2X, eastern, del. Phila....	21.26	21.76	21.76	26.21
Malleable, valley	19.50	19.00	19.75	24.60
Malleable, Chicago	20.50	20.40	21.40	26.75
Lake Superior charcoal, Chicago	29.04	29.04	29.04	32.04
Gray forge, val., del. Pittsburgh	20.76	20.51	20.76	26.27
Ferromanganese, del., Pitts....	94.79	98.79	112.29	114.79
SEMIFINISHED MATERIAL				
Sheets bars, bessemer, Pittsburgh	37.50	38.00	40.00	42.50
Sheet bars, open-hearth, Pitts....	37.50	38.00	40.00	42.50
Billets, bessemer, Pittsburgh	37.00	38.00	38.00	42.50
Billets, open-hearth, Pittsburgh	37.00	38.00	38.00	42.50
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.05	2.10	2.20	2.40
Steel bars, Chicago	2.00	2.06	2.14	2.50
Steel bars, Philadelphia.....	2.32	2.47	2.52	2.72

	Sept. 24, 1924	Aug., 1924	June, 1924	Sept., 1923
FINISHED MATERIAL (Continued)				
Iron bars, Philadelphia	$2.32	2.42	2.42	2 72
Iron bars, Chicago mill	2.10	2.13	2.25	2.38
Beams, Pittsburgh	2.00	2.05	2.20	2.50
Beams, Philadelphia	2.12	2.32	2.42	2.82
Beams, Chicago	2.00	2.16	2.38	2.60
Tank plates, Pittsburgh	1.90	2.00	2.15	2.50
Tank plates, Philadelphia	1.97	2.07	2.27	2.82
Tank plates, Chicago	2.00	2.13	2.38	2.60
Sheets, blk., No. 28 Pittsburgh	3.40	3.50	3.65	3.75
Sheets, blue anl., No. 10, Pitts.	2.70	2.70	2.80	3.00
Sheets, galv., No. 28, Pittsburgh	4.60	4.60	4.80	5.00
Wire nails, Pittsburgh	2.75	2.85	2.90	3.00
COKE				
Connellsville furnace, ovens.....	3.00	3.00	3.15	4.55
Connellsville foundry, ovens	4.00	4.00	4.15	5.70
OLD MATERIAL				
Heavy melting steel, Pittsburgh..	20.00	17.75	16.25	18.00
Heavy melting steel, eastern Pa.	18.00	17.00	15.65	16.85
Heavy melting steel, Chicago..	16.50	15.40	13.55	16.55
No. 1 wrought, eastern Pa.....	18.75	18.50	17.75	19.00
No. 1 wrought, Chicago	16.75	15.75	13.25	18.25
Rails for rolling, Chicago	17.50	16.00	14.55	18.30

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon

Composite Market Average

Representing the Combined Average Prices Per Ton of Fourteen Leading Iron and Steel Products Yesterday, One Week, One Month, Three Months, One Year and Ten Years Ago.

Sept. 24, 1924	Sept. 17, 1924	Aug. 1924	June 1924	Sept. 1923	Sept. 1914
$38.87	$38.95	$39.33	$40.61	$44.64	$23.17

Products Included Are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

price situation exists in the market. Cleveland furnaces are obtaining $20.50 furnace, readily for delivery in the 50-cent switching area, but not all are holding to $20, Cleveland furnace, for outside delivery. Outside of Cleveland lake furnace prices appear firm at $20. The Central Foundry Co., with plants in New York state, is understood to have placed most of the 6800 tons for which it was inquiring last week at a $19, Buffalo basis. The American Brake Shoe & Foundry Co. also has closed for around 7000 tons for its various plants. About half of the Cleveland order went to a local interest at $20.50, furnace, and half of the Pittsburgh order was taken by the same maker at $20, Pittsburgh. Selling generally is not heavy. Shipments, on the other hand, are the bright spot. Follansbee Bros. Co., that several $18.50. Inquiries include one round tonnage, with indications that it will be divided two or three ways. October will start with more than one-third of the probable output in Alabama for the month sold. One interest has announced that no consideration is being given to business for the first quarter.

Chicago Market Less Active

Chicago, Sept. 23.—Shipments of northern pig iron continue to exceed the August rate but selling is experiencing a slight reaction from last month. Day-to-day sales, however, are fairly heavy, and the melt is increasing steadily, but slowly. A Wisconsin implement maker has not yet closed on 3300 tons, reported in last week's inquiry. A Chicago foundry has taken 350 tons of high silicon iron. Several inquiries for 400-ton lots of foundry iron for last quarter are particularly with reference to northern iron. Some fairly heavy business has been placed at a slightly lower level than indicated in current quotations. Several producers found themselves with accumulations and with an outlet appearing they cut prices to land the tonnage.

The largest single transaction reported was 2000 tons of malleable to a car builder by the St. Louis Coke & Iron Co. The same producer sold 600 tons of foundry iron to a Kansas engine builder, 350 tons of car wheel iron to a local melter and scattered small lots aggregating 350 tons. The presentative of a southern furnace disposed of 200 tons to a stove maker and 150 to a job foundry. Kansas City melter took 150 tons for fourth quarter delivery and 100 went to a Texas user. An Iowa implement maker purchased 350 tons for October.

Iron and Steel Prices

SCRAP PRICES, PAGE 830; WAREHOUSE, PAGE 826; ORE, NUTS, BOLTS AND RIVETS AND PIPE PRICES, PAGE 832

Pig Iron

Prices per gross ton

Bessemer, valley	$20.00 to 21.00
Bessemer, Pittsburgh	21.76 to 22.76
Basic, valley	19.00 to 19.50
Basic, Pittsburgh	20.76 to 21.26
Basic, Buffalo	19.00
Basic, del., eastern Pa.	20.00
Malleable, valley	19.50 to 20.00
Malleable, Pittsburgh	21.26 to 21.76
Malleable, Cleveland, del.	21.00 to 21.50
Malleable, Chicago	20.50
Malleable, Buffalo	19.00 to 19.50
Malleable, del., eastern Pa.	21.75 to 22.25

FOUNDRY IRON SILICONS

No. 2 Northern	1.75 to 2.25
No. 2 Southern foundry	1.75 to 2.25
No. 2X Eas'n and Virgina	2.25 to 2.75
No. 1X Eastern	2.75 to 3.25
No. 1 Chicago	2.25 to 2.75
No. 2 foundry Eastern	1.75 to 2.25

No. 1X, eastern del., Phila.	21.76 to 22.26
No. 1X, Buffalo	20.50 to 21.00
No. 1 foundry, Chicago	21.00 to 21.50
No. 2 foundry, valley	19.50 to 20.00
No. 2 foundry, Pittsburgh	21.26 to 21.76
No. 2 foundry, Buffalo	19.00 to 19.50
No. 2 foundry, Chicago	20.50 to 21.00
No 2 foundry, Granite City	21.50 to 22.00
No. 2 foundry, Ironton fur.	20.00
No. 2 foundry, Cleveland, del.	21.00 to 21.50
No. 2 foundry, del., Phila.	20.76 to 21.26
No. 2 foundry, N. J. tidewater	21.39 to 21.64
No. 2X, eastern del., Phila.	21.26 to 21.76
No. 2X, east. N. J. tidewater	21.89 to 22.14
No. 2X, eastern del., Boston	24.15 to 24.65
No. 2X, foundry, Buffalo fur.	19.50 to 20.00
No. 2X, Buffalo, del. Boston	25.41 to 25.91
No. 2 southern, Birmingham	17.50 to 18.00
No. 2 southern, Cincinnati	21.55 to 22.05
No. 2 southern, Philadelphia	25.30 to 25.80
No. 2 southern Chicago	23.51 to 25.01
No. 2 southern, Cleveland	23.51 to 25.01
No. 2 southern, Boston (rail and water)	24.41 to 24.91
No. 2 southern, St. Louis	22.67 to 23.17
No. 2X, Virginia furnace	24.50
No. 2X, Virginia, Phila.	29.67
No. 2X, Virginia, Jersey City	30.04
No. 2X, Virginia, Boston	30.42
Gray forge, eastern Pa.	20.50
Gray forge, val. del., Pitts.	20.76 to 21.76
Low phos., standard, valley	27.00 to 28.00
Low phos., standard, Phila.	nominal
Low phos., Lebanon, furnace	24.00 to 24.50
†Low phos., English, Phila.	nominal
Charcoal, Birmingham	30.00 to 31.00
Charcoal, Superior, Chicago	29.04

Silvery Iron
Jackson County, Ohio, furnace

7 to 8 per cent	29.00
8 to 9 per cent	30.50
9 to 10 per cent	32.50
10 to 11 per cent	34.50
11 to 12 per cent	37.00
12 per cent	39.50

Bessemer Ferrosilicon
Jackson County, Ohio, furnace

10 to 11 per cent	39.50
11 to 12 per cent	42.00
12 to 13 per cent	44.50

Ferroalloys

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resale	$90.00 to 95.00
Ferromanganese delivered Pittsburgh	94.97 to 99.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	31.00 to 33.00
†Spiegeleisen, English, delivered tidewater	nominal
Ferrosilicon, 50 per cent contract freight allowed	72.00 to 75.00
Ferrotungsten standard, cents per pound contained	86.00 to 88.00
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	10.00 to 10.25
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	$3.25 to $3.75
Ferro carbon-titanium, carloads, producer's plant, per net ton	$200.00

†Duty paid.

Coke

Beehive, Ovens
Prices per net ton

Connellsville, furnace	3.00 to 3.25
Connellsville foundry	4.00 to 4.50
New river foundry	8.50 to 9.00
Wise county furnace	3.75 to 4.00
Wise county foundry	4.50 to 5.00
Alabama furnace	4.50 to 5.00
Alabama foundry	5.00 to 5.25

By-Product

Foundry, Newark, N. J., del.	$10.41
Foundry, Chicago, ovens	10.75
Foundry, Boston, delivered	11.50
Foundry, St. Louis	11.00
Foundry, Granite City, Ill.	9.00
Foundry, Alabama	5.00 to 5.25

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS
4 x 4-inch base

Open-hearth, Pittsburgh	$37.00
Open-hearth, Youngstown	37.00
Open-hearth, Philadelphia	41.17
Open-hearth, Chicago	35.00 to 37.00
Bessemer, Pittsburgh	37.00
Bessemer, Youngstown	37.00
Forging, Pittsburgh	42.00
Forging, Philadelphia	45.17 to 47.67

SHEET BARS

Bessemer, Pittsburgh	37.00 to 38.00
Bessemer, Youngstown	37.50

SLABS

Pitsburgh	37.00
Youngstown	37.00

WIRE RODS
¼-inch and finer

Wire rods, Pittsburgh	$45.00 to 46.00
Wire rods, Cleveland	46.00
Wire rods, Chicago	49.00

Standard extras, $2.50 per ton over ¼-inch; $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp, Pittsburgh	2.00c
Universal skelp, Pittsburgh	1.95c to 2.00c
Sheared skelp, Pittsburgh	1.95c to 2.00c

Shapes, Plates and Bars

Prices per pound

Structural shapes, Pittsburgh	2.00c to 2.10c
Structural shapes, Phila.	2.07c to 2.32c
Structural shapes, New York	2.09c to 2.34c
Structural shapes, Chicago	2.00c to 2.15c
Structural shapes, Cleveland	2.17c
Structural shapes, Birmingham	2.15c to 2.25c
Tank plates, Pittsburgh	1.90c to 2.00c
Tank plates, Philadelphia	1.92c to 2.02c
Tank plates, New York	1.94c to 2.04c
Tank plates, Chicago	2.00c to 2.15c
Tank plates, Cleveland	2.04c to 2.09c
Tank plates, Birmingham	2.05c to 2.17c
Bars, soft steel, Pittsburgh	2.00c to 2.10c
Bars for cold finishing, Pitts.	2.15c to 2.25c
Bars, soft steel, Philadelphia	2.32c to 2.42c
Bars, soft steel, New York	2.34c to 2.44c
Bars, soft steel, Chicago	2.00c to 2.10c
Bars, soft steel, Cleveland	2.19c to 2.29c
Bars, soft steel, Birmingham	2.15c to 2.25c
Bars, refined iron, Pittsburgh	2.90c to 4.50c
Bars, rail steel, Chicago	2.03c
Bars, rail steel, mill	1.90c to 2.00c
Reinforcing bars, billet, Pitts.	2.10c
Bar iron, common, Phila.	2.32c
Bar iron, common, New York	2.34c
Bar iron, common, Chicago	2.10c to 2.15c
Bars, forging quality, Pitts.	2.35c to 2.40c

Hoops, Bands, Strip

Prices per pound

Hoops, Pittsburgh, under 5 in.	2.50c to 2.60c
Hoops, Pittsburgh, 20 gage, under 1 in.	2.90c to 3.00c
Bands, Pittsburgh	2.40c to 2.50c
Hot rolled strip steel, Pittsburgh stamping quality	2.40c to 2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	4.00c to 4.25c

Cold Finished Steel

Prices per pound

Cold finished steel bars, drawn or rolled Pittsburgh and Chicago, carloads	2.70c
Cold-finished steel bars, drawn or rolled Pittsburgh and Chicago, less carloads	2.95c
Steel shafting, turned and polished Pittsburgh and Chicago	2.70c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-hearth rails, mill	43.00
Relaying rails, St. Louis	27.00 to 32.50
Relaying rails, Pittsburgh	25.00 to 28.00
Light rails, 25 to 45, mill	1.85c to 1.90c
Angle bars, Chicago base	2.75c
*Spikes, railroad, Pitts.	2.75c to 2.80c
*Spikes, small railroad, 7/16-in. and smaller	3.25c
Spikes, boat and barge, Pitts.	3.25c to 3.40c
Spikes, railroad, Chicago	2.80c to 3.00c
Track bolts, Pitts. standard	3.75c to 4.00c
Track bolts, Pitts., small	3.75c to 4.00c
Track bolts, Chicago	3.80c to 4.00c
Tie plates, Pittsburgh	2.50c
Tie plates, Chicago	2.45c

Spike, tie plate and truck bolt prices for carlots.

*New list.

Wire Products

To Jobbers in Carloads
Prices per pound
Cleveland and Pittsburgh base

Wire nails	2.75c
Galv'd nails, 1-inch and over	3.00c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire, No. 9 gage	3.10c
Barbed wire, painted	3.20c
Barbed wire galv.	3.45c
Polished staples	3.20c
Galvanized staples	3.50c
Coated nails, count keg	2.20c

Joliet, Dekalb and Waukegan, Ill., $2 per ton over Cleveland-Pittsburgh base on products made there, Worcester $3 higher. Chicago delivered price $3 higher.

Sheets

SHEET MILL BLACK
Prices per pound

No. 28, open-hearth, Pitts.	3.40c to 3.50c
No. 28, bessemer, Pitts.	3.40c to 3.50c
No. 28, open-hearth, Phila.	3.62c to 3.82c
No. 28, open-hearth, Chicago	3.74c to 3.84c

TIN MILL, BLACK

No. 28, open-hearth, Pitts.	3.40c to 3.50c

GALVANIZED

No. 28, open-hearth, Pitts.	4.50c to 4.60c
No. 28 bessemer, Pittsburgh	4.50c to 4.60c
No. 28, open-hearth, Phila.	4.82c to 4.92c
No. 28, open-hearth, Chicago	4.84c to 4.94c

BLUE ANNEALED

No. 10, open-hearth, Pitts.	2.60c to 2.70c
No. 10, bessemer, Pittsburgh	2.60c to 2.70c
No. 10, open-hearth, Phila.	2.92c to 3.02c
No. 10, open-hearth, Chicago	2.94c to 3.04c

AUTOMOBILE SHEETS

No. 22, Pittsburgh	4.75c

Tin Plate

Prices per 100-pound box

Tin plate, coke base, Pitts.	$5.50

Iron and Steel Pipe

Base Discounts Pittsburgh to Jobbers in Carloads

	Black	Galv.
1 to 3-inch, butt steel	62	50½
1 to 1¼-inch, butt iron	30	13

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3½ to 3¾-inch	35

Chain, Piling, Cut Nails

Prices per pound

Chain, 1-in. proof coil, Pitts.	6.00c to 6.25c
Sheet piling base, Pittsburgh	1.95c to 2.05c
Cut nails, Pittsburgh	2.90c

Hot Rolled Alloy Steels

Prices per pound, Pittsburgh, bars

S. A. E. Series—

2300 (3½ per cent nickel)	4.75c
3100 (nickel chromium)	3.65c to 4.00c
6100 (chrome vanadium)	4.50c to 4.75c
6100 (chrome vanadium spring)	4.35c to 4.50c
9250 (Silico manganese spring)	3.50c to 3.75c

Billets—4 x 4 to 10 x 10, gross ton at net ton bar price; under 4 x 4 to 2¼ x 2¼-inch, $5 higher.

Scrap in Good Position

Trading Steady and Prices Advance Generally as Tonnage Is Absorbed —Lessened Speculative Buying Is Indicated—Offerings Lessened

SCRAP PRICES, PAGE 830

Chicago, Sept. 23.—Sentiment in iron and steel scrap continues rather heavy and lower prices being bid for railroad offerings indicate less speculative activity. A railroad list closed a few days ago brought out $17.25 for heavy melting steel, which is only 25 cents above the top of the present spread on this grade, while two weeks ago bids ran $2 a ton over the market. The melt of scrap in the Chicago district is increasing slightly and the present condition is due largely to a halt in runaway optimism. Dealers are offering $13.75 for No. 1 busheling delivered to a Chicago district consumer. A Chicago melter has taken short rails at $18.50. A purchase of railroad specialties by a Chicago district melter has brought a reduction of 50 cents in specialty grades. Railroad offerings include 5000 tons of heavy melting steel and 8000 tons of discarded car steel by the Chesapeake & Ohio railroad, 5500 tons by the Burlington, 800 tons by the Elgin, Joliet & Eastern and a blind list by the Michigan Central.

Scrap Inquiry Improves

Boston, Sept. 23.—Some active trading in heavy melting steel has taken place the past week but the movement has scarcely reached the New England district. Good authorities claim that about 40,000 tons of steel scrap have been contracted for by eastern Pennsylvania steel works and undoubtedly this will mean that a round tonnage will be covered in this district. Already the market is firmer. Sales at $12 and $12.50 which were frequent early in the week are now practically impossible and most holders of heavy steel scrap refuse to go below $13 f.o.b. shipping point. Several hundred tons of chemical borings have been sold at $11 to $11.15 per gross ton shipping point. Mixed borings and turnings and stove plate have both been in slightly better demand with prices unchanged. The cast grades are also reported slightly more active although actual sales are still meager. Inquiry for cast scrap according to one dealer runs into four figures. Prices for cast grades are still soft despite the increased inquiry. Strictly textile scrap is scarce but is obtainable at $20.50 to $21 delivered. No. 1 machinery is freely quoted at $20 delivered.

East Absorbs Some Tonnage

New York, Sept. 23.—While iron and steel scrap trading has not been large, some fairly large orders have been placed. Notable is the purchase of 6000 tons of borings and turnings by a Johnstown consumer, on which dealers are said to be paying around $14.50 a ton delivered. A fair tonnage of wrought pipe is also being bought by dealers for shipment to Lebanon, Pa., at $16.50. Buying in this territory of heavy melting steel for shipment to western Pennsylvania is noted for the first time in two or three weeks. Dealers for the most part are paying around $19.50 delivered. Yard steel for shipment to Harrisburg has been purchased at $15.50 by local dealers.

Cast scrap is moving in restricted tonnage, dealers and consumers having difficulty in agreeing on prices. One lot of heavy cast has been sold for shipment to a northern New Jersey point at $17.50, delivered. This was the consumers' buying price. On back shipments of railroad steel or the equivalent, dealers are paying $17 delivered Coatesville and $17.50 delivered Claymont, Del. For shipment to Bethlehem, they are paying $16 and $16.50 delivered. Prices generally are unchanged.

Buys Tonnage At $20

Pittsburgh, Sept. 23.—Purchases of more than 5000 tons of heavy melting steel scrap by a mill at Vandergrift, Pa., at $20, maintains that figure as the quotable market level. Steel foundries have been buying steel specialties in small lots and are paying as high as $22.50. These latter grades are up 50 cents. It now develops that quotations carried on sheet bar crops for a week or two have been out of line since recent sales have been at $21.50 on round tonnages. One or two nearby consumers are expected to enter the market this week, such as Midland or Monessen, Pa., and possibly one or two users in West Virginia as well. Cast grades are quiet and prices remain unchanged. Scrap lists from railroads are much smaller than usual and recent lettings of the Chesapeake & Ohio and the Norfolk & Western railroads did not reach this territory at all. The Pennsylvania railroad list is expected the latter part of this week or the first of next, and probably will approximate 30,000 or 40,000 tons of various grades.

Good Buying at Buffalo

Buffalo, Sept. 23.—Last week's sales of scrap were the largest for months in the Buffalo district. Both the Bethlehem and Donner Steel companies are understood to have largely covered fourth quarter requirements in one of the heaviest buying movements of recent months. It is estimated the two bought 65,000 tons of heavy melting steel. Prices are said to have ranged from $17.25 to $18, Donner paying the top price because of its need of an exceptional grade for alloy production. Some dealers are reported to have paid $18 to $18.75 for material which they had planned to sell at a market of $19 to $20. There has been considerable activity in other materials. Heavy sales of hydraulic compressed sheets at $16 to $17 are reported, also some lots of loose bundled sheets around $13. No. 1 busheling was quoted at $16 to $17 and a brake shoe manu-

(*Concluded on Page* 773)

Semifinished More Active

Users Contract for Fourth Quarter—Sheet Bars and Billets at $37.50—Cleveland a Basing Point for Wire Rods

SEMIFINISHED STEEL PRICES, PAGE 771

Pittsburgh, Sept. 23.—Several steelmakers in this territory report an influx of orders for semifinished material during the past week or two. One independent manufacturer accepted orders within a period of five days last week for about 25,000 tons of sheet bars, forging billets, and rerolling slabs from several customers. The sheet bar business brought $37.50. The price on forging billets is $42. On rerolling slabs as high as $37.50 was obtained. The majority of the half-dozen large forging billet users in this territory are now under cover at the $42 figure. While some users of rerolling billets claim to be able to buy at $36, the usual figure quoted is $37 and one or two makers are maintaining that as a minimum. One inquiry developed here within the past few days called for 400 tons of high carbon slabs on which $38, plus carbon and other extras was quoted, but the business went elsewhere at a lower figure. Some wire rod business has been accepted at $45 although one or two have not quoted below $46 and these are receiving shipping instructions regularly on their contracts taken at the $46 figure. Wire rods now are priced by the American Steel & Wire Co. at both Pittsburgh and Cleveland at $46 base with correspondingly higher figures at other mill points. Skelp usually is quoted at 2.00c although on some universal and sheared skelp, prices similar to the prevailing low quotations on plates have been made such as 1.95c.

Pittsburgh Equivalent $36

Philadelphia, Sept. 23.—Billet sales are small. Those of rerolling quality are being sold at a price equivalent to $36 base Pittsburgh, or $41.17 delivered Philadelphia. Forging billets are $4 to $5 higher. Wire rods are $46 base Pittsburgh.

Sales Made at $37.50

Cleveland, Sept. 23.—Demand for semifinished material is fairly active, and the leading maker here has booked most of its production for fourth quarter at market prices prevailing at time of delivery. A few sales have been made in the open market at $37.50 on sheet bars, billets and slabs. This price, Pittsburgh base, applies on a shipment into the New England territory. The change in the Pittsburgh-plus method of quoting will not have much affect, as the leading maker in this district of sheet bars, billets and slabs has been booking on various bases, such as mill, valley, Pittsburgh, or delivered, depending on the state of the market. In regard to wire rods, however, Cleveland now is established effective Sept. 22 as a basing point, on the same basis as Pittsburgh.

The current price on wire rods is $46, Cleveland.

Scrap in Good Position

(*Concluded from Page 772*)

facturer is taking all the stove plate offered at $16.75. Demand for turnings and borings is light with quotations $12.50 to $13 on the former and $13 to $13.50 on the latter.

Lower Tendency Is Seen

Philadelphia, Sept. 23.—Consumers are buying some scattered tonnages but the main activity in the market for iron and steel scrap is the effort by dealers to accumulate tonnage to fill recent orders. The present tendency as a result is toward lower prices.

Is Strong at Cleveland

Cleveland, Sept. 23.—Iron and steel scrap movement continues fairly active with considerable consuming interest manifested in inquiries. The prospect of more substantial buying accordingly is encouraging to the trade which looks for early improvement in business. Prices are unchanged from last week's level but are strong.

Sofeness in Detroit Market

Detroit, Sept. 23.—The tenseness which prevailed recently in iron and steel scrap has weakened and there is less demand among dealers. While prices are showing no change the market is regarded as much softer. Consumers still are not inclined to take offerings even of well selected scrap. Pressure from producers also has lifted somewhat.

Market Lacking in Support

Cincinnati, Sept. 22.—Iron and steel scrap movement in the Cincinnati district is in small volume. Consumers are supplying only immediate needs, trading being largely between dealers covering on contracts. Prices, while unchanged from last week's levels, are soft. Dealers say that the strength given the market during the past fortnight by heavy purchases by users in other districts had been withdrawn. Producers are offering out a fair supply of turnings and blast furnace stock, but dealers have shown no inclination to bid as the outlet appears closed. Cast iron also is weak. Offers by railroads have decreased. The Louisville & Nashville has closed on a list aggregating 8,000 tons. Little of the tonnage found its way into this market.

St. Louis Demand Strong

St. Louis, Sept. 22.—Except for some distress material, iron and steel scrap prices are steady and some fairly heavy business has been done at current levels. One East Side steelmaker purchased about 10,000 tons of steel specialties and rails, while another took a round tonnage of melting steel, paying $15.75 to $16 for it. In addition there was scattered buying, by steel plants and foundries. A large aggregate tonnage went to the jobbing foundries, which have booked additional orders for their products, and stove manufacturers were also in the market. Rolling mill grades are somewhat more active and there is demand for material suitable for blast furnace use.

More Coke Sales Pending

Furnaces About To Resume Operations Bring More Interest in Market—Operations Increased—Prices Steadier

COKE PRICES, PAGE 771

Pittsburgh, Sept. 23.—Further increase in beehive coke production is noted, the immediate possibility of the Bethlehem Steel Co. putting on three additional blast furnaces and buying beehive coke to round out its by-product supply. However, this is thought to be a resumption on a Connellsville furnace coke contract suspended last winter. Another blast furnace, now inactive is inquiring for 500 tons daily for 30 or 60 days. One consumer was quoted $3.19 on October requirements. It is understood to have bought at $3, but $3.25 seems to be the firm contract market figure for deliveries extended over the balance of the year. The Clinton Iron & Steel Co. is getting ready to blow in its furnace. This may mean some coke market activity if the open market figure is below the production costs of its own coke affiliation. The Struthers Furnace Co. is inquiring in a quiet way, and may blow in its furnace. The inquiry of the A. M. Byers Co.'s Girard, O., furnace for 15,000 tons monthly, still is active. The spot market is $3 to $3.15, the maximum figure applying on single carloads or small lots going to gas companies on high-price contracts taken some time ago. If pending coke business materializes the trade anticipates a desire on the part of the coke workers for a restoration of the higher wage scale. Foundry coke sales are spasmodic, usually at $4 to $4.50. Occasionally a buyer offers to pay more for protection over the last quarter and first quarter. Makers are disinclined to accept business for first quarter. Some sellers are able to obtain $4.75 to $5.25 on premium brands.

Production of coke for the week ended Sept. 13 was 55,970 tons compared with 52,130 tons in the preceding week, according to the *Connellsville Courier*.

Foundry Demand More Active

New York, Sept. 23.—Demand for foundry coke shows more life. Some fourth quarter inquiries have come out. On these, the makers are quoting approximately 50 cents higher per ton than their spot prices. The spot market on beehive foundry coke continues to range from $4 to $5.25, Connellsville, although anything under $4.50 is exceptional. On by-product foundry coke the market continues $10.41, delivered at Newark and other northern New Jersey consuming points.

Market Is Firmer

Cincinnati, O., Sept. 23.—Recent coke sales in this district indicate consumers are fairly well stocked. Demand, especially for domestic coke, has expanded and prices are firmer. The supply of coke in most instances far exceeds demand. A leading seller reports the sale of 1200 tons of by-product domestic coke to the Cincinnati Traction Co. for shipment over the remainder of the year. Other sales of domestic coke ranged from a car to 400 tons. Foundry coke demand has eased off slightly due to foundry operations in this district not being on as large a scale as a fortnight ago. Furnace coke demand is lacking. Price schedules remain unchanged, but sellers are offering concessions on furnace fuel. Connellsville and Pocahontas coke are not factors in the local market. Accumulations at by-product plants are growing but prices hold steady.

Spot Buying Continues

St. Louis, Sept. 23.—Increased sales of domestic coke feature the market. Ordering by dealers is at a brisker rate than at any time this year. Further slight improvement is noted in the demand for foundry coke. Frequent orders for small quantities represent a fairly large aggregate. Little coke is coming from the East or South, virtually all needs being supplied by the by-product manufacturers. Some inquiries are out for the fourth quarter, but the policy needs in the current market seems o be gaining ground. Prices are unchanged.

Southern Coke Sold at St Louis

Birmingham, Ala., Sept. 22.—Southern coke producers are shipping a few carloads of their product to St. Louis and surrounding territory. Local consumption is encouraging and production holds up. Quotations are unchanged foundry coke being offered at $5 and $5.25, and the furnace grade, $4.50.

Buy Foreign Fluorspar

Pittsburgh, Sept. 23.—Foreign fluorspar, German and English, is interfering in a measure with sales of Kentucky and Illinois material, since it is quoted at $18 to $18.50, seaboard, Baltimore or Philadelphia. From Baltimore to Pittsburgh the class rate is $4.80, but some is being brought in from Philadephia on a commodity rate of $3.02 per gross ton, or about $2.70 per net ton. Since the freight rate from Kentucky mines to Pittsburgh is $5.25, foreign sellers have an advantage. One contract for domestic material, however, was taken recently at $18 f.o.b. Kentucky mines. Higher figures have prevailed on single carloads.

Will Roll Cotton Ties

Birmingham, Sept. 23.—Improvements and additions to the Bessemer rolling mills, Bessemer, Ala., of the Tennessee Coal, Iron & Railroad Co., just announced, will include motors to speed the production of existing mills and the installation of equipment to permit rolling smaller sizes, including cotton ties which heretofore have not been produced in this district by the Steel corporation. The contemplated development involves an expenditure of about $300,000. The present annual capacity of the Bessemer mills is given as 62,000 tons of merchant bars and 48,000 tons of sheared plates.

The Great Lakes Valve Corp., Chicago, has increased its capital from $35,000 to $100,000.

Bars in Strong Position

Better Buying and Firm Prices Give Strength as Many Lines of Consumption Add to Activity—Specifications Better

BAR PRICES, PAGE 771

Chicago, Sept. 23.—Slightly improved buying of soft steel bars by all classes of users is reported by makers. Buying of more than 90,000 tons of finished material by freight car builders has helped to lengthen order books, but more encouraging to makers was the gain in general buying. Manufacturers of bolts, nuts and rivets in particular have protected themselves. The automotive industry is slow in picking up and relatively the gain by farm implement makers is better. The soft steel bar quotation is 2.00c to 2.10c, Chicago.

Neither bar iron nor rail steel has developed any decided tendency, and incoming business is barely sufficient to enable part time operations to be continued. A bar iron mill that was down last week is resuming this week. Bar iron has a range of 2.10c to 2.15c, Chicago, while rail steel commands 2.00c, mill, or 2.03c, Chicago.

Occupy Strong Position

Pittsburgh, Sept. 23.—Sales at 2.10c involving 100 to 3000-ton lots, indicate that merchant steel bars constitute the strongest item among the heavier rolled steel products. It is understood that in conjunction with structural material bars have sold at 2.00c and that in certain sections of the country 2.00c and 2.05c have been developed, but so far as the Pittsburgh market is concerned 2.10c is the quotable figure.

Iron bars are in slightly heavier demand although prices show no tendency to stiffen. Some iron bars recently were ordered by railroad car builders. From 2.90c to 4.50c, f.o.b. Pittsburgh district mills, are the levels quoted.

Sales Decline Slightly

Boston, Sept. 23.—Despite some round tonnage bar contracts placed for last quarter delivery, the total sales of the past week dropped off some in comparison with the week previous. Inquiry is encouraging and prices are firm. Most mills are quoting 2.465c mill with freight allowed to New England destination. This figures back to 2.10c base Pittsburgh. The New England bar market has been firmer all through September than the market further west.

Buying Quiet at Philadelphia

Philadelphia, Sept. 23.—Steel bar buying is quiet and prices now are 2.32c to 2.42c, delivered. Philadelphia, which is equivalent to 2.00c to 2.10c, base Pittsburgh. The leading maker here is quoting delivered prices with reservations covering any possible freight rate changes. Independents are quoting f.o.b. mill freight prices. Considerable buying of concrete bars was done in the past week for stock. The Pennsylvania railroad is inquiring for 200 to 500 tons of bars for fourth quarter.

Eastern Demand Is Fair

New York, Sept. 23.—Steel bar demand is fair but not as good as desired. The price tendency continues easy and while some makers have refused to shade 2.10c base Pittsburgh, others have sold at 2.00c. Makers generally are quoting delivered prices but these are equivalent in all cases to the Pittsburgh delivered prices so that the market in New York may be quoted at 2.34c to 2.44c base delivered.

Consumer Prices Unchanged

Cleveland, Sept. 23.—Readjustment of steel bar prices to the new conditions created by the abandonment of the Pittsburgh plus method of quoting is under way. Generally no change in the price situation over that which previously existed has appeared. The mills as a rule are naming delivered prices to destination which are based on prevailing figures at Pittsburgh plus the freight. For Cleveland delivery these prices usually have been 2.24c to 2.29c, Pittsburgh which is equivalent to 2.05c to 2.10c, Pittsburgh, or the previous Pittsburgh base levels. In some cases $1 lower is reported to have been done. Steel bands are quoted at 2.59c, Cleveland, equivalent to 2.40c, Pittsburgh and hoops at 2.79c, delivered, equivalent to 2.60c, Pittsburgh. Hoops have sold at 2.55c and even lower, Pittsburgh basis. In some directions new business in bars has fallen off while buyers are getting their bearings in the new price situation. In others it has continued in the same way as recently showing a steady increase over August.

Cold Drawn Improvement Continues

Pittsburgh, Sept. 23.—Cold finishers and drawers of bars find continuance of recent improvement in orders. Contracting activity is about up to normal for this time of the year and various consuming lines are represented. Operations have not increased in the past week or two, being maintained at 40 to 45 per cent. Makers are adhering firmly to the 25-cent differential for less-than-carload quantities, the carload price being 2.70c to 2.80c. They are not aggressively seeking contract business for last quarter although some have been written up for regular customers.

Good Buying of Hoops

HOOP PRICES, PAGE 771

Pittsburgh, Sept. 23.—Some attractive business has been done recently by hoop and band makers and since the material was needed immediately, operations were suddenly increased in some cases. At least two makers in this territory operated their hoop and band departments full for a week or more. They expect to be able to continue along this line with the receipt of further specifications. One independent maker reports that its hoop and band department is busier than any other section of the mill, the material being mostly for automotive purposes. From 2.50c to 2.60c, f.o.b. Pittsburgh district mill, is fairly representative of the market although some band makers have gone lower in competition with bar producers.

Bolt, Nut, Rivet Prices on Pittsburgh Base

NUT AND BOLT PRICES, PAGE 832

New York, Sept. 23.—A firmer tone continues to be reflected in the bolt and nut market. Where 70 and 10 was done on large machine bolts some weeks ago, it now is difficult to shade 60 and 10 off. Makers generally are inclined to get away from the Pittsburgh base in making their quotations, although nothing definite along this line yet has been done. However, the trade generally and particularly buyers, continues to think of the price in terms of Pittsburgh, so that it is likely the customary method will be to quote delivered prices on a Pittsburgh base figure.

The rivet market continues to reflect weakness. Most current business is going at prices ranging from 2.50c to 2.65c base Pittsburgh, equivalent to 2.84c to 2.99c base, delivered New York. However, the 2.40c Pittsburgh base has not entirely disappeared. Some eastern makers have discontinued quoting on a Pittsburgh basis.

Price System Unchanged

Philadelphia, Sept. 23.—Eastern bolt makers have not yet changed their bolt prices to conform with the elimination of the Pittsburgh plus decree. Due to the discount system it is not expected that it mill prove convenient to change. Current demand is slow, bolts being generally firm at 60 and 10 off. In a number of cases makers who recently sold lower than that level now are refusing to shade. It is expected that the small rivet price for fourth quarter business will be 70 and 5 off. Rivet demand is somewhat firmer and it now is difficult to do under 2.60c, Pittsburgh, although lower quotations have not disappeared entirely.

Business Is Developing

Pittsburgh, Sept. 23.—Contracts for fourth quarter requirements of nuts and bolts are coming through on the basis of 60 and 10 off for large machine bolts, Pittsburgh basing discounts still continuing. Spot trading is active and frequent carload sales are noted, with occasionally more attractive tonnages coming in. Users and jobbers are ordering and there is less price hesitancy than in months past. This is true of rivets which are quoted at 2.60c, Pittsburgh, which price appears to be held firmly. Manufacturers are less inclined to offer concessions. On small rivets, 70, 10 and 5 off is quoted, with some measure of success as shown by the volume of recent orders.

Retain Pittsburgh Basis

Cleveland, Sept. 23.—Bolts, nuts and rivets, for the time being at least, will continue to be quoted on a Pittsburgh basis. This is understood to be the decision reached by the majority of producers, many of whom have been perplexed as to the extent of the federal trade commission's cease-and-desist order to the United States Steel Corp. in the matter of Pittsburgh plus practice, and

as to whether or not this would be extended to them.

Better Specifications Coming

Chicago, Sept. 23.—Makers of bolts and nuts have received slightly heavier specifications from agricultural implement interests in the past few days, showing an inclination to fill present needs before higher fourth quarter prices are effective. The automobile industry is not displaying the increased interest that was expected. Representatives of bolt and nut makers in this district claim to be adhering strictly to 60 and 10 off for large machine bolts for fourth quarter delivery.

New Wire Prices

Put On Separate Basis for Each Mill—Prices Down $1

WIRE PRICES, PAGE 771

Chicago, Sept. 23.—New wire and wire products prices of the American Steel & Wire Co. utilize a Pittsburgh-Cleveland base with differentials for mills in other localities. Quotations on products from the Joliet, De Kalb and Waukegan, Ill., mills will be $2 over Pittsburgh-Cleveland, and prices delivered in Chicago $3 over Pittsburgh-Cleveland.

Complete revision has not yet been accomplished, but the new Pittsburgh-Cleveland quotation on hard, bright wire is 2.50c and on wire nails to jobbers 2.75c. Galvanized barbed wire is 3.45c, polished staples 3.20c, galvanized staples 3.45c and coated nails 2.15c. Material delivered in Chicago will cost 15 cents more per 100 pounds and material shipped from the Joliet, De Kalb and Waukegan mills 10 cents more.

Production of coated nails at Joliet, for example, is sufficient only to take care of mixed-lot demands and excess demand will be filled from the nearest mill and quoted from there. Specialties will be quoted f.o.b. Worcester, Mass., but on common products the eastern market will be Pittsburgh-Cleveland plus a $3 differential. Woven wire fencing will continue to be sold on a delivered zone basis, business taken for the Joliet, De Kalb and Waukegan mills, for example, to be $2 over Pittsburgh-Cleveland plus the freight from these three western points.

Plain wire at 2.55c, Pittsburgh in the past has figured out 2.89c, delivered Chicago. The new quotation delivered Chicago is 2.65c, or a reduction of $4.80 a ton. Bookings have been confused during the process of price readjustment but makers look for a big influx of business.

Cleveland Buyers Favored

Cleveland, Sept. 23.—Naming of Cleveland as a base on wire products equal with Pittsburgh, by the American Steel & Wire Co. will mean a saving to buyers in this district of $1 to $2 per ton. Previously Cleveland took a $2 differential over Pittsburgh. The new base which also has been reduced $1 per ton is 2.50c on plain wire and 2.75c on nails. This means 2.52c, on wire and 2.77c on nails, delivered in the immediate Cleveland territory. Wire rods are placed at $46, Cleveland.

Car Plate Orders Heavy

Purchases at Chicago Involve 90,000 Tons of Steel—Pipe and Railroad Needs Feature Eastern Market—Pittsburgh Equivalents Unchanged

PLATE PRICES, PAGE 771

New York, Sept. 23.—One of the interesting plate jobs now before the trade is a pipe line for Boston, on which bids are to be opened Oct. 2. This is a 17,000-foot, 60-inch line involving about 2500 tons of plates. The Chicago Bridge & Iron Works has booked an order from the Electric Bond & Share Co., for a 1,000,000-cubic foot gasholder at Miami, Fla., involving about 1000 tons of plates. The contract contains two interesting features. The bottom of the tank and the roof of the holder are to be welded, which is an innovation in this class of work. In addition, an oil storage tank with capacity for 240,000 gallons, is to be placed inside of the holder.

The New York Central and Erie railroads are in the market for their fourth quarter plates and other steel requirements. Buying by the general run of consumers is somewhat better, so that the eastern mills are operating on an average above 50 per cent. Prices have shown no improvement and continue to range from 1.94c to 2.04c delivery New York. Some of the eastern mills generally have followed the example of the leading maker in abandoning the Pittsburgh plus method of quoting. They now are quoting f.o.b. mill or delivered and in many cases are naming a figure at the mill with freight allowed. In the latter case the price is computed by adding the freight from Pittsburgh to a Pittsburgh base price so that this really amounts to a Pittsburgh delivered figure. In all cases, in fact, the trade continues to think of prices in terms of Pittsburgh so that it is likely that the delivered price on plates will continue to correspond to a Pittsburgh equivalent.

It is expected that some substantial tonnage for oil tanks for Colombia will materialize shortly. The New England Refining Co. has withdrawn its recent inquiry for oil tanks.

The Belle Island Co. has placed with a New York yard a steamer involving 400 tons of plates.

Claim 2.00c Is Minimum

Pittsburgh, Sept. 23.—Several steelmakers have encountered quotations on plates below 1.90c to 2.00c, Pittsburgh, but some maintain that the 2.00c figure is their absolute minimum. Recent plate business to reach makers here originates in large part with railroad car builders, not much business being contributed by tankmakers at present. These latter are purchasing small amounts, usually 200 or 300-ton specifications on contracts to cover the orders they receive from time to time for one or two oil or water tanks. Delivered prices probably will be quoted after the abandonment of the Pittsburgh plus system becomes universal. Details remain to be worked out. The J. K. Davidson & Bros. Co., sand and gravel operators in the Allegheny river, are asking bids for the construction of six barges for the Allegheny river trade. The barges of 600 tons capacity will be 135 feet long, 26 feet wide, and 10 feet deep.

Price Still Considers Pittsburgh

Philadelphia, Sept. 23.—Plate demand is slower, but eastern makers generally have managed to maintain operations at 50 to, in one case, 100 per cent. The largest open market inquiry is for 500 to 1000 tons of plates for the Pennsylvania railroad for the fourth quarter. An eastern mill booked a considerable tonnage of locomotive plates, the remainder of the order going to a Cleveland mill. Eastern makers are quoting on f.o.b. mill price, freight allowed, but the leading interest is quoting a delivered price. In all cases the delivered price is equivalent to a Pittsburgh delivered price. The New York Central has awarded a ferry boat to the Staten Island Shipbuilding Co., involving 600 tons of steel.

Delivered Prices Are Named

Cleveland, Sept. 23.—Plate prices delivered in this district are quoted from 2.04c to 2.09c which is equivalent to 1.85c to 1.90c, Pittsburgh. One maker is reported to have sold on a $1 lower basis. Delivered prices generally are taking the place of the former method of quoting on a Pittsburgh base plus the freight. Eastern mills have been naming a mill price which is equivalent to the Pittsburgh base formerly quoted plus the freight to Cleveland and are allowing freight to the consumer. This figures back to the same basis of 1.85c to 1.90c, Pittsburgh base which was formerly named. An inquiry is out in this territory for 3000 tons of plates for a riveted pipe line in Boston. The New York Central railroad will take bids Oct. 3 on 1000 tons of plates, shapes and bars for fourth quarter delivery. Other material specified for bids at this time are 1500 tons of axles, 250 tons of blue annealed and galvanized sheets, 350 tons of wire nails and staples and 150 tons of forging billets. New tonnage has been keeping up well with the tendency still to increase.

Large Tonnage Placed

Chicago, Sept. 23.—Finished steel, largely plates, placed for freight cars in this district last week exceeded 90,000 tons. One maker of plates booked 5000 tons for tank work from one tankmaker. Conflicting reports come from the Southwest in regard to the necessity for oil storage tanks. The reports go to either extreme, some foreseeing enormous tonnage coming out while others hold that present tank capacity must suffice. The range on plates in the Chicago district is 2.00c to 2.15c, Chicago.

Railroad Seeks 500 Tons

Cincinnati, O., Sept. 23.—The Big Four railroad has entered the market for its last quarter requirements, which include 500 tons of plates, a quantity of nails, wire fence, axles and tubes. Bids close Sept. 30.

Concrete Market Gains

Cleveland Union Terminals in Market for 19,000 Tons—Philadelphia Store Takes 2500 Tons—Small Work in Good Volume

REINFORCING BAR PRICES, PAGE 771

Cleveland, Sept. 23.—Featuring the local concrete reinforcing bar market is the inquiry by the Cleveland Union Terminals for approximately 19,000 tons of bars, delivery to be spread over five years. This year 600 tons is to be delivered, and 4500 tons a year for the succeeding four years. This is the largest inquiry to develop in the Cleveland territory in many months. Concrete bar tonnage is moving better, with heavier sales closed last week than in a month. Small tonnage projects continue numerous and inquiries are gaining in volume as buyers seek to get construction under way before winter interferes with building progress. New billet bars continue to go at 2.00c to 2.10c, Pittsburgh, with a lower price having been done on a local tonnage placed this week. The market is weak and 2.00c would not be the minimum on attractive business. Rail steel bars are untested at 1.90c to 2.00c, mill with lower possible on attractive tonnages. New billet bars out of warehouse are going at 2.30c to 2.45c, Pittsburgh, with most small lots moving at the top price. The warehouse market is stronger, one local interest quoting 3.10c, Cleveland warehouse.

Small Total Being Placed

New York, Sept 23.—A comparatively small total characterizes the demand for concrete bars at this time. The most spectacular business was the award of the 2500 tons for the Montgomery Ward warehouse at Baltimore, to the Kalman Steel Co. This business was closed quietly two or three weeks ago. The market on concrete bars for mill shipment now is 2.00c to 2.10c, base Pittsburgh. On warehouse shipments prices are weak, ranging from 2.25c to 2.30c base Pittsburgh and around 2.75c to 2.80c, base New York.

Inquiries Scarce; Orders Few

Pittsburgh, Sept. 23.—Concrete bar inquiries at present are scarce and orders of late have been few and far between. Action on the Butler Baking Co.'s building, Butler, Pa., has been postponed until next spring. About 200 tons are involved in the Shriner's temple at New Castle, Pa., on which the S. M. Siesel Co., Milwaukee, is general contractor. The Metzger-Richardson Co. will furnish about 220 tons of rail steel bars for the Woodville Insane Asylum, Woodville, Pa., and 125 tons for the Etna, Pa., high school. The price on rail steel bars remains at about 1.90c, Pittsburgh, as against the 2.10c figure on the billet-rolled bars. One fabricator is quoting 2.10c f.o.b. its Youngstown, O., mill, with freight rate to destination which avoids the Pittsburgh basing point quotation but achieves the same result. This interest's warehouse price is 2.25c.

New Business Is Light

Buffalo, Sept. 23.—The boards are almost clear of new inquiry for reinforcing bars but mill production will continue at high levels for another 60 days because of recent heavy placements. A Buffalo mill took a 100-ton contract for a Rochester building last week and some small road contracts were placed. About 300 tons of material for road work is unplaced. Prices are firm, 2.15c being asked for mill shipment and 2.30c for bars from stock.

Prospect More Disappointing

Chicago, Sept. 23.—Prospects of reinforcing bar warehouses become progressively darker each week. Large jobs slated to close shortly can be counted on the fingers of one hand, while small work also is disappearing. Building permits indicate September construction will be half that of a year ago, and the slump is greater in concrete than in steel construction. It develops in this market that 700 tons for the city market in St. Louis went recently to the Laclede Steel Co. American System of Reinforcing is low bidder and almost certain of award on 300 tons of bars for the Snelling-Mendota bridge, at St. Paul, with an option of 1000 tons additional. The reinforcing bar market now is down to 2.15c, Chicago, while 2.10c has been done on mill shipment.

Movement Still Is Small

Cincinnati, Sept. 23.—Movement of reinforcing bars continues of small volume in this district. Distributors say that not more than 1000 tons were sold in this district last week. No large tonnage is in sight, although several large construction jobs are considered, but nothing definite has been done on them. Fisher DeVore Co. has been awarded the general contract for the addition to the plant of the Lunkenheimer Co. at Carthage, O., which will require 250 tons. Plans are in preparation for an addition to the Ware hotel at Dayton, O. Several sewer construction jobs were let by the county of Hamilton, O., which will involve several hundred tons. The Hauser Stander Tank Co., Cincinnati, has awarded the Austin Co. the general contract for the new addition to its plant. Concrete bars are quoted from 2.00c to 2.10c, Pittsburgh base.

CONCRETE CONTRACTS PLACED

Awards this week	6,279 tons
Awards last week	1,961 tons
Awards two weeks ago	5,028 tons

2500 tons, warehouse for Montgomery Ward & Co., Baltimore, to Kalman Steel Co.
700 tons, city market, St. Louis to Laclede Steel Co.
600 tons, power plant addition at Fort Miami, O., to Bourne-Fuller Co.
350 tons, addition to Bulkley garage, Cleveland, to Truscon Steel Co. instead of Bourne-Fuller Co. as announced last week.
300 tons, sewer construction for Hamilton county, Ohio; awarded various unnamed fabricators.
300 tons, Western avenue pumping station for the city of Chicago, to Joseph T. Ryerson & Son, Inc.
220 tons, Woodville Insane asylum, Woodville, Pa., rail steel bars to Metzger-Richardson Co.
200 tons, buildings for Capitol university, Columbus, O., to Bourne-Fuller Co.
200 tons, road work, Essex county, N. J., to Igoe Bros.
194 tons, Brambach Piano Co. building, New York, to Concrete Steel Co.
150 tons, several roadwork projects in Ohio, western Pennsylvania and northern Kentucky, to Concrete Steel Co.
150 tons, two roadwork projects in Ohio, to Bourne-Fuller Co.
140 tons, Municpal building, Brooklyn, N. Y., to Concrete Steel Co.
125 tons, high school, Etna, Pa., to Metzger-Richardson Co.
100 tons, reservoir at Calumet, Ind., to Concrete Steel Co.
100 tons, several roadwork projects in Ohio, to Paterson-Leitch Co.
100 tons, grade crossing work for New York Central railroad, Tarrytown, N. Y., to McClintic-Marshall Co., general contractor, Louis Chevalier, Inc.
100 tons, addition for Topping Bros., New York, to Kalman Steel Co.
100 tons, building in Rochester, N. Y., to a Buffalo mill.

CONCRETE CONTRACTS PENDING

1200 tons, Relief home, San Francisco; bids postponed.
1000 tons, Hills Bros. warehouse, Stuart and Harrison streets, San Francisco; bids being taken.
1000 tons, New York state arsenal building, Brooklyn, N. Y.; bids on general contract rejected and plans will be redesigned.
700 tons, 70-apartment building at Everett avenue and Fifty-sixth street, Chicago; closes this week. General contract to Longacre Engineering & Construction Co., 127 North Dearborn street, Chicago.
500 tons, Jewish synagogue, San Francisco; pending.
350 tons, Bailey Co. warehouse, Cleveland; revised plans up for bids.
300 tons, Snelling-Mendota bridge, St. Paul; American System of Reinforcing, low bidder.
300 tons, roadwork in New York, near Buffalo; pending.
250 tons, addition to plant of Lunkenheimer Co., at Carthage, O.; general contract awarded Fisher DeVore Co.
225 tons, Alameda high school, Alameda, Cal; bids in.
200 tons, garage for Swift & Co., New York; postponed until spring.
170 tons, Merced Irrigation district, Merced, Cal.; general contract placed but steel not yet awarded.
114 tons, two bridges in Kern county, Cal.; bids in.
Tonnage unstated, foundations for 16-story structural steel warehouse for Hibbard, Spencer, Bartlett & Co., Chicago. Graham, Anderson, Probst & White, 80 East Jackson boulevard, Chicago, architect. Plans out in about 60 days.
Tonnage unstated, bids taken until Oct. 15 by Sidney Minchin, Inc., 53 West Jackson boulevard, Chicago, on a 5-story plant, 120 x 140 feet, for the Rindsberger Mfg. Corp., 18 East Twenty-fourth street, Chicago.
Tonnage unstated, for 12 school buildings authorized by the board of education, 646 South Clark street, Chicago; to proceed immediately.
Tonnage unstated, floors and foundations for 14-story apartment building at Sheridan road and Wellington avenue, Chicago, for which W. T. Hooper, 879 North State street, Chicago, is drawing plans.

Mill Basis

Named on Tubular Products Instead of Pittsburgh—Cast Demand Slow

PIPE PRICES, PAGE 771 AND 832

Pittsburgh, Sept. 23.—To conform to the abandonment of the Pittsburgh basing point method of determining steel prices, the National Tube Co. now is naming the same basing discounts on tubular products at Lorain, O., at its Pittsburgh plants. The Youngstown Sheet & Tube Co. is discontinuing its f.o.b. Pittsburgh price and is quoting delivered figures. The Wheeling Steel Corp. has not yet decided on its course of procedure.

Pipe orders continue and mills generally are running on a 70 to 75 per cent basis. Practically all grades of pipe participate and representative orders usually comprise one to five carloads at a time, from users and jobbers. Outstanding orders for oil country goods from a tonnage standpoint such as line pipe, are rare although several lines still are pending, including a Louisiana line of 90 miles; one from the Prairie

Oil & Gas Co., a Standard Oil Co. subsidiary, involving 115 miles to Parco, Wyo. Nothing recently has been heard concerning the 350-mile line for South America for the Andean Corp.

Private Buying Maintains Market

New York, Sept. 23.—The local water department will close general contractors' bid Sept. 30 on the purchase and installation of several hundred tons of 12, 20 and 24-inch pipe. Aside from this there is little of note in the way of municipal activity. Private buying, while comprised of few sizeable tonnages, continues to maintain the market, with prices unchanged. Pipe makers are booked up for two months on most sizes and 30 days beyond on some.

The Pan-American Petroleum & Transport Co. just has placed an order for 35 miles of 10-inch line pipe for installation in Mexico, involving about 3500 tons.

Buying Three Months Behind

Chicago, Sept. 23.—One maker of cast iron pipe now is booking some business which ordinarily would have come out in June and July, and foreses the placement of pipe business which has been deferred by local conditions in the Middle West. Some municipalities in the Northwest are expected to go ahead now with improvements made possible by higher grain and livestock prices and the resulting local prosperity. The quotation on 4-inch pipe at Chicago continues $56.20 to $57.20 and on 6-inch and over $52.20 to $53.20, Chicago.

CAST IRON PIPE PLACED

500 tons, Berkley, Mich., to National Cast Iron Pipe Co.
250 tons, Anderson, Ind., to James B. Clow & Sons.
Unstated tonnage, Shelton, Wash. to Burns & MacDonald.
Unstated tonnage, Lafayette, Oreg., to B. C. Seydell.
Unstated tonnage, Arlington, Oreg., to McFarland Engineering Co.

CAST IRON PIPE PENDING

3634 tons, 4 to 24-inch pipe for Bakersfield, Cal.; bids will be invited in near future.
3000 tons, 6 to 24-inch class B pipe for Bellingham, Wash.; bids in.
675 tons, Chicago; bids in Sept. 25.
206 tons, 4 and 6-inch pipe, San Bernardino, Cal.; bids in.
Several hundred tons, water department, New York; general contractors' bids to close Sept. 30.
13,263 lineal feet of 56-inch riveted steel pipe or 54-inch lock bar steel pipe for Ninth and Lander street project, Seattle, Wash.; bids Sept. 26.
Tonnage unstated, Lakeville, Minn.; bids in.
Unstated tonnage for Anacortes, Wash.; including pipe, filter, etc.; bids to be opened in October.
Unstated tonnage for Port Angeles, Wash.; iron pipe for distributing system; plans to be out in 30 days.

Lower Rates Suspended

Washington, Sept. 23.—The interstate commerce commission has ordered suspended, pending an investigation, until Jan. 18, the operation of certain freight shipped from points in Colorado on the rate schedules proposing to reduce the rates on various iron and steel products Colorado & Southern railroad and its connections to Texas common points. The proposed rates would reduce merchant iron and steel bars from 73 cents to 62 cents from Colorado points to Fort Worth, Corsicana and Houston, Tex., and fence posts and wire from 69.5 cents to 58 cents to and from the same points.

Sheet Prices Are Steady

Makers Quoting on Mill or Delivered Basis, but Valley or Pittsburgh Levels Are Controlling Factors—Full-Finished Demand Better

SHEET PRICES, PAGE 771

Pittsburgh, Sept. 23.—While the volume of sheet business continues to show perceptible growth, the price situation is no stronger and in some sections considerable competition continues to be encountered. Specifications have so increased from customers of the American Sheet & Tin Plate Co. that a further increase in its sheet mill operation has been made possible, and within the last week it has reached 70 per cent, with prospects of continuing at that rate throughout the present week. Independents are averaging between 65 and 70 per cent of capacity and all report good specifications on different grades, galvanized being slightly heavier this week, black being fair, and blue annealed holding its own. Full-finished automobile sheet orders recently have been coming through in good number and so far as can be learned the 4.75c figure prevailed. On black, while the commonly quoted level is 3.50c and that figure is maintained as a minimum by one or two producers, 3.40c again has appeared and one or two cases are known where an even lower figure has been named. Concessions of $2 per ton likewise have been made on galvanized and blue annealed, making the quoted range on the former 4.52c to 4.60c and on the latter, 2.60c to 2.70c. Plans still are in process of formation for the abandonment of the Pittsburgh plus method of quoting prices, but these levels f.o.b. mill, plus freight to destination to make a delivered price, probably will be quoted. In times of slow demand, these levels probably will be sidetracked and the freight absorbed to a greater or less extent, to permit the mills here to compete in other territories.

Quoting Mill Prices

Philadelphia, Sept. 23.—Sheet buying is fair. The market is more stable. The leading maker is quoting delivered prices, with a clause protecting himself against any change in the freight rate. Other makers generally are quoting a mill price, freight allowed, which is equivalent to recent delivered prices from Pittsburgh. However, all eastern prices are equivalent to the Pittsburgh basis. Blue annealed generally is 3.02c, delivered Philadelphia, with some sales at 2.92c. Black sheets are 3.72c to 3.82c delivered; galvanized 4.82c to 4.92c.

Motorcar Builders Place Orders

Buffalo, Sept. 23.—Detroit automobile makers have placed substantial tonnage of sheets within the past 10 days. Local mills have increased production to two-thirds of capacity. Large users have been able to buy black sheets for 3.40c, Pittsburgh but smaller consumers find the market firm at 3.50c. Small independents are not as active competitors for business as they were earlier in the quarter and rumors of cut prices have practically disappeared.

Name Different Price Bases

Youngstown, Sept. 23.—Sheet buyers just now seem to be devoting considerably more attention to possible methods of quoting than to actual purchases, although this is not true of full-finished or automobile sheets. Users of the latter grades are specifying freely and adding to their purchases as needs arise. The buyers of No. 28 gage black sheets have not done a great deal in the past week but have covered immediate needs. Buyers of autobody sheets have covered well through October and into November in some cases. Black sheets continue quoted at 3.50c, Pittsburgh, but with rumors of 3.40c coming in from other districts. Full-finished hold firmly at 4.75c, while galvanized sheets continue to be quoted at 4.60c and blue annealed at 2.70c. Differences of opinion exist as to how to quote, now that Pittsburgh plus has been partially abandoned. Some mills at Youngstown still quote the Pittsburgh price as mill base, plus freight to destination, others the straight Pittsburgh price. Some mills at Niles, O., quote a mill price plus freight from Niles to destination; while still others quote a delivered price to consumer's mill. The general expectation is that on sheets some general system of quoting will develop within the next week or 10 days.

Market Awaits New Prices

Chicago, Sept. 23.—The sheet market has been suspended in mid-air since the announcement of the United States Steel Corp. that it would abolish Pittsburgh plus. Many consumers have inquired concerning the new prices and many have evidenced a desire to place some business on the books of local makers at this time. Business thus offered to one maker in this district has been taken on the old basis of 2.70c, Pittsburgh, for blue annealed, 3.50c, Pittsburgh, for black and 4.70c, Pittsburgh, for galvanized. Sheet business has been coming out in increasing volume for a few weeks and the uncertainty as to new levels has not proved a retarding factor.

Strip Orders Growing

STRIP PRICES, PAGE 771

Pittsburgh, Sept. 23.—Orders have been increasing for several weeks in both hot and cold strips. In the case of one or two prominent manufacturers here business in September to date, exceeds all of August which was better than July. Operations still are around 50 to 60 per cent with producers disinclined to commit themselves on contracts although some regular customers have been taken on in the usual way. Pending the working out of problems in abandonment of the Pittsburgh base, the base quotations continue in force, 4.00c to 4.25c on cold and 2.40c to 2.50c on hot. A decided tendency to stiffen is noted among producers and the minimums more and more are applicable only to large, attractive tonnages. Where some makers of hot strips have encountered blue annealed sheet as well as plate competition on material 8-inches and wider, 13-gage and lighter, they have quoted 2.30c to 2.40c, the general figure on material one to 8 inches wide, 12-gage and heavier, with 2.50c applying on the lighter gages.

Shape Buying Maintained

Numerous Small Orders Aggregate Good Total in Structural Market—Philadelphia Subway Work Progresses—5000 Tons Placed in Chicago

STRUCTURAL SHAPE PRICES, PAGE 771

Chicago, Sept. 23.—While the approach of fall necessarily brings a slowing-up in structural awards, the volume in this district has not experienced the full customary seasonal dip. A department store and an apartment building have accounted for nearly 5000 tons this week. The 2500 tons in the Standard club are expected to be awarded this week to fabricating interests allied with the Inland Steel. Co. The Illinois Central railroad has awarded the first portion of the steel for its electrification program in Chicago and has about 1800 tons more to be placed. The plain material range is 2.00c to 2.15c, Chicago.

Heavier Sales At Boston

Boston, Sept 23.—Structural sales in New England noticeably improved during the past week although large awards were absent. Prices hold close to 2.365c delivered New England points which figures 2.00c Pittsburgh base. Quotations are being made on a delivered basis rather than f.o.b. mill.

Lettings Are Much Lighter

New York, Sept. 23.—Although several fair-sized contracts have been recently placed, structural buying in the aggregate was not as large as a week ago. One of the larger recent awards calls for 2000 tons for an apartment at Park avenue and Eighty-eighth street. Industrial activity is slack. Concessions on the part of some of the mills of late has done much to offset the firmer tendency in shapes noted earlier in the month. The market on plain shapes now appears around 2.14c to 2.34c, New York, equivalent to 1.80c to 2.00c Pittsburgh.

Demand Quiet; Prices Unchanged

Philadelphia, Sept. 23.—Structural shape demand is quiet and orders are less than shipments. Prices are easy, with the market equivalent to 1.80c to 1.90c, base Pittsburgh, or 2.12c to 2.22c, Philadelphia.

Ordering Rate Is Light

Pittsburgh, Sept. 23.—Awards for the past week have been fewer in number and of smaller tonnage individually than in many weeks past. Fabricators report that severe competition still is being encountered on material fabricated and erected, and most shops need business. Material for a building for the Penn-Hardware Co., Reading, Pa., about 100 tons, has been ordered from the Jones & Laughlin Steel Corp. here by the H. K. Ferguson Co., Cleveland, general contractor. A school at Mt. Lebanon is up for bids, Ingham & Boyd, Empire building, Pittsburgh, being architects. The formal order for the steel has not come through as yet for the Shriner's temple at New Castle, Pa. 1200 tons, from the S. M. Siesel Co., Milwaukee, general contractor. Bids probably will be asked in the spring on a 4-story building designed for six stories additional, to be located at Smithfield and Sixth streets, Pittsburgh, by the Smithfield & Sixth Avenue Land Co., Benno Janssen, serving as architect.

Awards More Numerous

Cincinnati, Sept. 23.—Some structural shape contracts are being placed. The Virginia Bridge & Iron Co. received a 600-ton bridge order from the Alabama Power Co. Birmingham. An order for a 100,000-cubic foot capacity gas holder has been received by the Stacey Mfg. Co. from the Albany Gas & Light Co. Albany, Ga. Inquiries while more numerous involve small tonnages for the most part. Plain material prices are firmly held at 2.00c, Pittsburgh.

Large Tonnages Lacking

Cleveland, Sept. 23.—Large tonnages of structural shapes are lacking in the local market, although awards of small projects continue numerous. Several fabricators in this district are almost idle, and fabricated and erected prices show a consequent weakness. Plain material prices are unsettled at 2.00c, Pittsburgh, with no large tonnages to test that quotation.

STRUCTURAL CONTRACTS PLACED

Building awards this week ..... 21,684 tons
Building awards last week ..... 30,021 tons
Building awards two weeks ago.... 12,279 tons

3274 tons, store building for W. A. Wieboldt & Co., Chicago, to American Bridge Co.

2000 tons, apartment, Eighty-eighth street and Park avenue, New York, to Paterson Bridge Co.

1600 tons, two apartment houses on east and west Seventy-fourth street, respectively, New York, placed by Schwartz & Gross, architects, with the Easton Structural Steel Co.; this award was reported in last week's issue as involving 3200 tons.

1510 tons, apartment building at Lake Shore drive and Elm street, Chicago, to Kenwood Bridge Co. Robert S. DeGolyer, 7 South Dearborn street, Chicago, architect.

1414 tons, building for First National Bank, Youngstown, reported awarded to McClintic-Marshall Co. Mellon-Stuart Co., Pittsburgh, general contractor.

1400 tons, boiler house, Narragansett Electric Light Co., Providence, R. I., announced last week as awarded to Bancroft Jones Corp.; general contract to Charles B. Maguire Co., Turks Head building, Providence, R. I., instead of C. E. McIntyre of Boston as previously listed.

1000 tons, Shrine auditorium, Los Angeles, Edwards, Wildey & Dixon, general contractors; steel awarded to Llewellyn Iron Works.

900 tons, Second National bank, Saginaw, Mich., to Russell Wheel & Foundry Co.

900 tons, apartment, 120 West Forty-fifth street, New York, to Bethlehem Fabricators, Inc.

750 tons, apartment at Nineteenth and Rittenhouse streets, Philadelphia, to New York Shipbuilding Co.

650 tons, laundry at 134th street and Southern boulevard, New York, to George A. Just Co.

600 tons, bridge for Alabama Power Co., Birmingham, Ala., to Virginia Bridge & Iron Co.

550 tons, Eagles temple, Seattle, to Poole & McGonigle.

460 tons, boiler house for glue plant of Armour & Co., Chicago, to Lakeside Bridge & Steel Co.

430 tons, catenary structural for Illinois Central railroad electrification in Chicago, to Continental Bridge Co.

400 tons, Fort Meigs hotel, Toledo, O., to an unnamed fabricator. Foster & Shanks, Cleveland, structural architects; Lewis & Warren, Louisville, Ky., mechanical architects. A. Bentley & Sons Co., Toledo, O., general contractor.

400 tons, two municipal housing stations, New York, to Hay Foundry & Iron Woks.

400 tons, apartment at East Ninetieth street, New York, to Hinkle Iron Co.

370 tons, 13 miscellaneous jobs to Palmer Steel Co.

350 tons, Bancroft hotel addition, Worcester, Mass., to the Eastern Bridge & Structural Co.

350 tons, addition to the plant of the Eastern Malleable Iron Co., at New Britain, Conn., previously noted as placed with a local fabricator, went to the Berlin Construction Co.

310 tons, mill extension and crane runaway for Pacific Coast Steel Co., Seattle; steel by Pacific Coast Steel Co. fabricated by Wallace Equipment Co.

300 tons, apartment at East Forty-ninth street, New York, to Hinkle Iron Co.

300 tons, turbine supports, Richmond street station, Philadelphia Electric Co., Philadelphia, to Shoemaker Bridge Co.

250 tons, addition to American Radiator Co. plant, Chicago, to Wendnagel & Co.

250 tons, framework for Elks temple, Lewiston, Idaho, to Clearwater Foundry Co., that city.

220 tons, repairs to three Rock Island railroad bridges in Chicago, to McClintic-Marshall Co.

200 tons, high school, Lexington, Mass., to Eastern Bridge Co.

200 tons, first Baptist church, Youngstown, O., to an unnamed fabricator.

200 tons, school at Meriden, Conn., to Bethlehem Fabricators, Inc.

200 tons, plant addition for Simplex Wire Co., Cambridge, Mass., to Boston Bridge Co.

200 tons, loft building at 13 West Thirty-sixth street, New York, to Hay Foundry & Iron Works.

180 tons, substation for Great Western Power Co., Twentieth and Telegraph avenues, Oakland, Cal., to Golden Gate Iron Works.

160 tons, compressor house for Pacific Gas & Electric Co., Twenty-third and Illinois streets, San Francisco, to Golden Gate Iron Works.

151 tons, plates, washers and rods for Chicago & North Western Railroad ore dock at Escanaba, Mich., to unstated fabricator.

150 tons, hospital, Waterbury, Conn., to McClintic-Marshall Co.

150 tons, upholstering shop for New York Central railroad at Albany, N. Y., to Belmont Iron Works.

150 tons, Engineering building for Ohio State university, Columbus, O., to unnamed fabricator.

150 tons, spinning mill, Meriden, Conn., to Boston Bridge Works.

135 tons, Simplex Mfg. Co. building, Boston, to Boston Bridge Works.

125 tons, building, Cambridge, Mass., to the Boston Bridge Works.

125 tons, musicians building, San Francisco, to Central Iron Works.

125 tons, parochial school, Mt. Vernon, N. Y., to American Bridge Co.

125 tons, New York State hospital, Long Island, to the American Bridge Co.

120 tons, addition to California Portland Cement Co., Colton, Cal., to Llewellyn Iron Works.

100 tons, civic auditorium, Hanford, Cal., to Minneapolis Steel & Machinery Co.

100 tons, Rhodes Bros. store, Seattle, to Isaacson Iron Works.

100 tons, building for the Penn Hardware Co., Reading, Pa., through H. K. Ferguson Co., Cleveland, general contractor, to the Jones & Laughlin Steel Corp.

100 tons, St. Josephs school, Newburgh, N. Y., to Belmont Iron Works.

100 tons, mills in Passaic, N. J., to Hay Foundry & Iron Works.

Tonnage unstated, 100,000-cubic foot gas holder, for Albany Gas & Light Co., Albany, Ga., to Stacey Mfg. Co.

Tonnage unstated, building for Central Union Trust Co., Fourteenth and Market streets, Wheeling, W. Va., to J. E. Moss Iron Works. R. R. Kitchen Co. is general contractor.

STRUCTURAL CONTRACTS PENDING

10,000 tons to 20,000 tons, open-hearth steel plant for Ford Motor Co., at River Rouge, Mich.; bids to be taken shortly.

9000 tons, second section of subway project in Philadelphia, bids close Oct. 21; two or three other sections are to be brought out later, the total required for the completed project being around 50,000 tons.

5000 tons, 26-story building for Chronin Construction Co., Court and Premson streets, Brooklyn, N. Y.; specifications expected shortly.

3000 tons, 22-story loft building at Fortieth street and Madison avenue, New York; bids asked

3000 tons, car shop at Flat Rock, Mich., for Detroit, Toledo & Ironton railroad; bids being taken.

2100 tons, Liberty Title & Trust Co. building, Philadelphia; Irwin & Leighton awarded general contract. Steel expected to go to Shoemaker Bridge Co.

2000 tons, apartment on Park avenue, New

York; T. K. Turton, 101, Park avenue, general contractor.

2000 tons, office and loft building for William H. English, Lafayette and Reade streets, New York; specifications to be out shortly.

1700 tons, first section of the Plaut department store in Newark, N. J., bids asked; this tonnage was referred to previously as being for a plant and department store.

1200 tons, Shriner's temple, New Castle, Pa.; general contract awarded the S. M. Siesel Co., Milwaukee.

1000 tons, patriotic hall, Los Angeles; bids in.

1000 tons, Clift hotel, San Francisco; bids being received.

750 tons, Cushman power project transmission towers, Tacoma, Wash.; new bids to be asked.

500 tons, school at Mt. Lebanon, Pa., Ingham & Boyd, 1211 Empire building, Pittsburgh, architect; bids close Sept. 29.

440 tons, Fireman's Fund Insurance Co., building, San Francisco; bids for addition being taken.

400 tons, factory, Garfield, N. J.; general contractors bids being taken.

400 tons, Co-operative office building, Hartford, Conn.; inquiry revived.

350 tons, Desopo office building, Hartford, Conn.; pending.

300 tons, telephone building, Poughkeepsie, N. Y.; pending.

300 tons, substation for New York Edison Co. at Ninety-fourth street, New York; pending.

300 tons, Masonic temple, Manchester, N. H.; bids in

300 tons, American Can Co., addition, Seattle; general contract to A. W. Quist Co.; steel contract not yet awarded.

300 tons, commercial building for J. E. Andrus, Jersey City, N. J.; pending.

300 tons, bridge for the Pennsylvania railroad; pending.

300 tons, bridge for the New York Central railroad; bids asked.

250 tons, Terry building, Ansonia, Conn.; pending.

250 tons, municipal pier shed at foot of Roosevelt street, New York; pending.

250 tons, Mack Truck Co. plant, Los Angeles; bids being taken.

250 tons, column cores, for reinforced concrete plant addition of the General Electric Co., Schenectady, N. Y.; pending.

225 tons, theater on East Seventy-sixth street, New York; pending.

200 tons, school at White Plains, N. Y.; A. F. Gilbert, 358 Fifth avenue, New York, architect.

200 tons, state highway bridge, Delaware; bids asked.

200 tons, warehouse for Whitall-Tatum Co., Millville, N. J.; the Austin Co., Cleveland and Philadelphia, general contractor.

200 tons, Lehmen building, Harvard university, Cambridge, Mass.; bids being taken. Coolidge & Shipley, Boston, architects.

200 tons, seminary, Hartford, Conn.; pending.

200 tons, Walker-Gordon Laboratory, Boston; pending.

200 tons, Y. W. C. A., Worcester, Mass.; pending.

200 tons, Washington street garage, Boston; bids being taken.

150 tons, bridge for the Southern railroad; bids asked.

150 tons, high school at Medford, Mass.; pending.

150 tons, school at Enfield, Conn.; pending.

110 tons, high school, Monson, Mass., pending.

100 tons, Franklin school, Wakefield, Mass.; pending.

100 tons, theater in Lenox, Mass.; pending.

100 tons, school at Springfield, Mass.; pending.

100 tons, spinning mill, Webster, Mass.; pending.

100 tons, hospital, Providence, R. I.; pending.

100 tons, Westchester County Title & Trust Co. building, White Plains, N. Y.; bids being taken.

Tonnage, unstated, 14-story apartment building at Sheridan road and Wellington avenue, Chicago; plans by W. T. Hooper, 879 North State street, Chicago.

Tonnage unstated, 15 miles elevated extensions by Chicago Rapid Transit Co., 72 West Adams street, Chicago, also enlargement 10 loading platforms and stations; project to move when authority, now asked for, is granted by Chicago council.

Tonnage unstated, two bridges over Fraser river, near Victoria, B. C.; pending.

Tonnage unstated, Lane county bridge over Williamette river near Eugene, Oreg.; bond issue planned.

Patented Machinery Development Corp., Bronx, N. Y. has increased its capital from $10,000 to $20,000.

Rail Inquiries Released

New York Central Definitely in Market for 150,000 Tons with 30,000 Tons Optional—Over 7000 Cars Pending in Chicago District

RAILROAD TRACK MATERIAL PRICES, PAGE 771

New York, Sept. 23.—Car buying is featured by few large orders. A good total is pending, and at least one sizable list, that of the Reading Co. involving 3000 cars, is expected to be closed soon. New inquiry also is restricted. Locomotive buying includes five for the San Antonio & Aransas Pass and one for the Angelina County Lumber Co., both contracts going to the Baldwin Locomotive Works.

In addition to the orders for 5000 tons of rails each which the Chesapeake & Ohio railroad placed with the Illinois Steel Co. and the Inland Steel Co., that road also placed 2300 tons with Bethlehem Steel Co. The New York Central railroad has inquired definitely for 150,000 tons of rails with an option on an additional 30,000 tons. The Lackawanna railroad is expected to be in the market shortly for approximately 15,000 tons. The New England roads are postponing action and are not expected to be in the market before the latter part of the year.

The New York Central and Erie railroads are taking bids on their requirements for the fourth quarter. The Erie will open bids Sept. 25 and the New York Central on Oct. 3. The latter railroad is in the market for the usual quantities of plates, shapes, bars, sheets, axles, wheels, billets, etc.

Among the largest locomotive business of the week was the reported award of contracts by the Chesapeake & Ohio for the repair of 48 locomotives to the Newport News Shipbuilding & Dry Dock Co. The Southern railroad is inquiring for 50 locomotives. The Reading railroad is expected to place its contracts for 3000 cars Sept. 24.

Ordering Rate More Restricted

Pittsburgh, Sept. 23.—Billet-rolled light rails are in exceedingly light demand. Buying is on an even more restricted scale than in several weeks past. Prices as low as 1.85c mill failed to inspire much activity and as many rails are being sold at 1.90c as at the lower figure. Coal mine trackage is not being extended and buying is curtailed accordingly to encompass needs in sight. Small carload sales are made occasionally. Rail-steel light rails are available at lower figures but orders are not heavy.

Track accessory demand is slim although considerable inquiry has developed from railroads, particularly in the South, for track accessories, such as spikes and tie plates for delivery over the first half and even into the third quarter of next year. Some buying remains to be done by northern railroads for the fourth quarter of this year. Inquiries are scheduled to appear within the next week or 10 days. Prices are unchanged on the quoted bases.

To Build Railroad in Spain

Washington, Sept. 23.—It is estimated that 30 locomotives, 150 passenger coaches, 500 freight cars and 70 bridges, of an average length of 20 meters, will be required in the construction of the proposed railroad from Santander to Calatayud, in Spain, according to advices to the United States States department of commerce from Trade Commissioner Burke, at Madrid. The concession for the construction has been granted a Madrid company.

Await 1925 Programs

Chicago, Sept. 23.—While miscellaneous lots of steel rails and track fastenings have been booked by local makers in the past week, the volume has not been great and renewed activity in these fields hinges upon the placement of 1925 programs. The Northern Pacific and the Pere Marquette are mentioned as probable fastenings buyers in the near future. The Chesapeake & Ohio railroad has awarded the Bethlehem Steel Co. 2300 tons of rails for its Hocking Valley subsidiary.

Local car builders have before them inquiry for more than 7000 freight cars. The placement of finished steel in this past week for freight cars recently awarded to Chicago district plants topped 90,000 tons. It is rumored that the Burlington railroad will purchase 2000 automobile and 500 coal cars, but confirmation is lacking.

Rail Inquiries Heavier

San Francisco, Sept. 20.—Bids have been called for 300 tons of 70-pound rails for the Alaska railroad, Seattle. These rails are standard except for punching, holes being 2 3/16-inches from the ends and 4½-inches between holes. Puget Sound Mills & Timber Co. has purchased 500 tons of 60 pound imported steel rail for its main logging line at Olympic Peninsula, Wash., the order being placed in Germany. A Washington lumber interest is inquiring for 1000 tons of 30 to 45-pound rail and accessories. Bids are being taken until Sept. 30 by Merced Irrigation district, Merced, Cal., for 2165 tons of 70-pounds rails, 6000 pair of angle bars, 220,000 pounds of track spikes, 106,000 compression bottom plates, 2600 pounds nut locks, 26,550 pounds of track bolts and nuts and nine frogs.

CAR ORDERS PLACED

Berwind White Coal & Mining Co., Philadelphia, 600 mine cars, to American Car & Foundry Co.

Erie railroad, eight combination passenger and baggage cars, to J. G. Brill Co.

Great Northern, 20 tank cars to General American Tank Car Co.

National Railways of Mexico, 50 gondolas, to the General American Car Corp.; these are in addition to 250 tank cars noted in a previous issue as placed with the General American Tank Car Co.

Pennsylvania Coal Co., 100 mine cars, to Pressed Steel Car Co.

CAR ORDERS PENDING

Asiatic Petroleum Co., five cars; pending.

Atchison, Topeka & Santa Fe, 5000 freight and a number of passenger cars; expected daily to enter the market.

Chicago, Burlington & Quincy, 2500 cars, 2000 automobile and 500 coal; expected daily to enter the market.

Great Northern, 700 automobile cars, and 600 steel underframes; bids asked.

Lehigh & New England, conversion of 200 gondolas to box cars; project reported as abandoned.

Ulen Contracting Co., 13 miscellaneous passenger cars; pending.

Nonferrous Metal Markets

	Copper			Spot		Lead				
	Electro delivered	Lake delivered	Casting refinery	Straits Tin, N. Y.	Lead New York	East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Spot Nickel
Sept 17	13.00	13.25	12.75	47.50	8.00	7.90	6.20	27.00	11.25	28.00
Sept. 18	13.00	13.25	12.75	47.87½	8.00	7.90	6.17½	27.00	11.25	28.00
Sept. 19	13.00	13.25	12.75	47.00	8.00	7.87½	6.17½	27.00	11.25	28.00
Sept. 22	13.00	13.25	12.75	45.62½	8.00	7.85	6.12½	27.00	11.25	28.00
Sept. 23	13.00	13.25	12.75	46.37½	8.00	7.85	6.12½	27.00	11.25	28.00

NEW YORK, Sept. 23.—Nonferrous metal prices have drifted a little lower in another week of sluggish markets. Tin was pounded again in the London market by the powerful operators who for some time prior to September had supported the market. The resultant decline in tin affected the speculative position of all the metals in London and the consequent reduction in London equivalents has had a sympathetic response on this side of the water. News of direct bearing on the markets has been scarce but such news as has come out has been constructive.

Copper—The feature of the week in copper was the break in price to 13.00c, Connecticut, occasioned by the entrance of certain large agencies into the market as competitive sellers. Some of the large consumers bought good sized tonnages when the market reached 13.00c, mostly for wire purposes. Export buying has been light, excepting for scattered sales for German account. Casting declined to 12.75c, refinery.

Copper wire—Wire prices have eased in sympathy with the lower copper market to 14.87½c to 15.12½c, base, mill for bare copper wire in good sized lots in the open market; 16.75c to 17.00c, mill, for weatherproof wire; and 18.00c, mill, for magnet wire. New business in wire has fallen off the past two weeks, due to the uncertainty of electrolytic copper prices, so that shipments recently have exceeded bookings. Mill operations, however, continue to average above 80 per cent of normal capacity.

Rolled copper and brass—New business in brass and copper rolled products has fallen sharply, averaging probably not over 25 per cent of current production, while specifications also have declined. Unless orders pick up within the next few weeks some of the mills may have to curtail operations shortly. The official base prices have not been changed since copper prices began to decline. Open market prices, however, are lower.

Zinc—Prime western zinc prices have declined about 10 points further, following the London market downward. A continued active export inquiry is reported, but the export bids continue just a little below our market. Germany has been a buyer of prime western in London and in America. Brass special continues to command a premium of 5 points over prime western.

Lead—Comparatively small offerings of prompt and October shipment lead at 7.85c, East St. Louis, in the recent dull market have sufficed to establish the market at that level. On eastern business, the quotation of the leading interest, 8.00c, New York, has been maintained. Reports from the paint, storage battery and cable trades continue encouraging and point to further expansion in consumption.

Tin—Straits tin prices dropped another 1½ cents here in the past week, following a 3-cent drop the previous week. A good volume of buying was done about a week ago by some of the large independent tin plate makers, but as prices continued to decline buying fell off, as consumers began to wonder where bottom might be. Supplies of tin in New York available for early delivery are abundant and spot continues obtainable at the same price as futures.

Antimony—Spot antimony has risen another ¼ cent to 11.25c, duty paid, the same price being quoted for metal afloat. The Oriental markets continue demoralized and offers of shipment metal are scarce.

Aluminum—The price of 98 to 99 per cent virgin ingot aluminum is unchanged at 27c, delivered. Another lot of 100 tons sold recently for fourth quarter delivery, at this price, the material being of foreign origin. Small lots are held at a slight premium.

Old Metals—Old metals continue slow on account of slack operations by foundries, and weak on account of the declines in new metals. However, the fall in dealers' buying prices has not been as great as in new metal prices.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
Copper, hot rolled	20.62½
High brass	17.25
Zinc, ga. 9 to 18 (plates ½c less)	9.85
Lead, full sheets (cut ¼c more)	11.75
Aluminum, bright, 0 to 35 gage	37.50 to 92.00
SEAMLESS TUBES	
High brass	21.50
Copper	22.75
RODS	
High brass, round, ⅜ to 2½ inch	15.00
Naval brass rods	17.75
WIRE	
Copper	15.00 to 16.00
High brass	17.75

Old Metals

Dealers' buying prices cents per pound

HEAVY RED BRASS	
Cleveland	8.75
New York	8.00 to 8.25
Chicago	8.50
HEAVY YELLOW BRASS	
New York	6.25 to 6.50
Chicago	7.00
Cleveland	6.50
ZINC	
New York	3.50 to 3.75
Cleveland	3.50 to 3.75
Chicago, dross	4.50
HEAVY COPPER AND WIRE	
Cleveland	10.25 to 10.50
New York	10.50 to 10.75
Chicago	10.25 to 10.50
RED BRASS TURNINGS	
New York	7.25 to 7.75
Cleveland	8.25
Chicago	8.00 to 8.25
YELLOW BRASS TUBING	
Cleveland	6.50
NO. 1 BRASS ROD TURNINGS	
Cleveland	7.00
New York	7.00 to 7.25
Chicago	7.00 to 7.50
LIGHT COPPER	
New York	9.00 to 9.25
Chicgo	9.00 to 9.50
Cleveland	9.00 to 9.25
LIGHT BRASS	
Chicago	6.25
Clippings, Chicago	8.25 to 8.85
ALUMINUM	
Borings, Cleveland	10.00
Old sheet, Cleveland	16.00
Clippings, Cleveland	19.00

Secondary Metals

Casting copper, refinery	12.75
Remelt aluminum No. 12	21.00 to 21.50

Steel Treaters' Meeting Pronounced Success

Boston, Sept. 23.—With an unusually good attendance at the technical meetings, and with the iron and steel exposition exceeding in size those of previous years, the annual convention of the American Society for Steel Treating already is an assured success.

Thus far three technical sessions have been held, all being well attended. In the absence of Mayor James M. Curley at the opening session, Charles J. Fox, director of the budget commission of Boston, welcomed the convention guests to the city. V. O. Homerberg extended the welcome of the Boston chapter of the American Society for Steel Treating and A. O. Fulton that of the local committee of arrangements.

George K. Burgess, president of the society, responded to the addresses of welcome, after which a number of technical papers were presented. Monday afternoon the discussion centered upon the use of salt baths as heating media, while Tuesday morning X-ray examination of steel and methods of testing metals received attention. A detailed report of the technical sessions will be presented in next week's issue.

The exposition is attracting unusual attention, probably on account of the extent and character of the machine tool exhibits. One third of the space used by the exposition at Commonwealth pier is devoted to the display of machinery, much of which is in actual operation under favorable conditions.

W. S. Bidle, president W. S. Bidle Co., Cleveland, has been nominated for president of the society.

Germans Low Sellers in Britain

Outbid Belgian and English Steelmakers—Latter Considering Pooling Arrangement for Buying Raw Materials—Business Scarce, 23 Per Cent of Workers Unemployed—Tin Plate Industry Active

Iron Trade Review Staff Cable

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, Sept. 23.—Business in the British iron and steel markets is scarce, and the tone is pessimistic. Two more blast furnaces in the Barrow-in-Furness district have been blown out, and two furnaces in Scotland will be closed in a few days. Pig iron stocks are heavy; orders are restricted to immediate requirements, and prices are shaded. A furnace at Middlesbrough that has been making ferromanganese this week was changed to other qualities.

Steel imported from Germany is underselling Belgian steel, in increasing tonnages. Several large structural undertakings have been suspended indefinitely as a result of the recent building strike, now settled. Some British steelmakers are considering a proposal for the organization of a pool for purchasing their raw materials. The amount of unemployment among steelworkers in August is announced as 23 per cent.

Tin plate business is widening, and makers of galvanized sheets are busy. The number of active tin plate mills has increased by 24 this year, the total now being 413.

A Dusseldorf firm has booked an order for locomotives and rolling stock for India, while a French mill has closed for 1500 tons of standard rails for the Algerian state railways at 550 francs ($29), per metric ton, f.o.b. Dunkerque.

British Hope for Fall Business Not Realized

European Staff Special

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, Sept. 12.—Optimism recently prevailing among English iron and steel merchants regarding trade prospects for the fall is somewhat subdued. Little new business is going on, in most cases only for small lots. However, two Glasgow firms have obtained an interesting order for electric material for suburban railroads in Cape Colony. The value of this order is estimated to be about £100,000 ($445,000). It is reported that the British Mannesmann Tube Co., of Swansea, has obtained a tube order for Russia which will occupy the mills for about two months. The Power Gas Corp. of Stockton-on-Tees is reported to have closed a contract for gasworks for Yokohama, Japan.

Inquiries are on the British market for large tonnages of tubes for Chile and locomotives for Uruguay and Egypt. A heavy inquiry for galvanized sheets is expected to be received from India. P. H. Griffin of the Griffin Chilled Steel & Iron Co., New York, is in England, in the interests of his process of manufacture of chilled cast wheels.

Foreign competition on the British market is as keen as ever, particularly from Belgium and Germany. German wire rods are offered at £7 17s 6d delivered (1.59c per pound). This is about £2 10s to £3 below British prices. German basic bessemer bars are quoted at £7 5s delivered Birmingham district (1.47c per pound) for 300-ton lots. The pig iron market continues dull and the continental producers are competing successfully against British pig iron on foreign markets, and in some cases are underselling British products in this country. However, it is reported from Brussels that the volume of exports of pig iron to Great Britain is small as British buyers are offering low prices. It is also said the Pacific coast market is being disputed by a new Utah furnace.

Belgium is trading to a certain extent with South America but inquiries from Japan have declined and the civil war in China is practically closing that market. Belgian iron bar mills which have been doing considerable business with Great Britain, report less satisfactory dealings under increasing competition from soft steel bar manufacturers. In semifinished steel Belgian makers are refusing business at prices offered by British merchants, and in only a few cases are able to obtain 490 francs ($24.50) f.o.b. Antwerp. Furthermore, stocks of continental steel in Great Britain are still plentiful. Belgian producers are experiencing keen competition on the part of Germany which is quoting wire rods at £6 10s (1.32c) and freely undercutting Belgian prices on plates.

From Luxemburg it is reported that an important contract for rails, 53 to 54 kilos per meter (108 pounds per yard) has been closed by the Arbed-Terres-Rouges group with the Belgian state railroad. Belgian rail mills have shown little interest in this contract except Cockerill and Ougree-Marihaye, owing to the fact that the minimum percentage of silicon required by the specifications was 0.25 per cent. The two Belgian concerns mentioned above have taken only a few thousand tons. However, the result of this contract with the Luxemburg mills has been rather unsatisfactory owing to the high percentage of rejections they have sustained.

In France export trade is confined to markets east of the Rhine and semi-finished steel also continues to be sold to Italy at remunerative prices. The ferromanganese market has been shaken by price cuts by Norwegian and British makers. British ferromanganese is offered in France at about 1200 francs ($63.00) f.o.b. Rouen, but French producers continue to quote 1400 to 1450 francs ($73.50 to $75) delivered, assuming that it is more to their advantage to build up stocks and sell their product with a profit when prices have risen to a more normal level. The French have cut prices on wire rods to meet Saar competition. The Saar mills are offering wire rods at 660 francs per metric ton (1.80c per pound) delivered f.o.b. frontier, duty paid. Saar merchant bars are also offered at 575 francs (1.38c). As a result Lorraine mills have cut prices and bars are offered on the home market at 550 francs (1.20c).

The project of the French government to contract with the German government for 4500 freight cars on the reparations account is causing misgivings to French manufacturers.

British Exports Less

European Staff Special

Birmingham, Eng., Sept. 12.—The British board of trade's return for August shows a total export of iron and steel productions, including scrap, amounting to 306,832 tons, compared with 347,799 tons in July and 330,421 tons in August last year.

Imports, including scrap, were 216,954 tons against 247,154 tons in July and 121,906 tons in August last year.

The United States figures as a buyer of 4650 tons of pig iron compared with 13,646 tons in the same month last year. Purchases of ferroalloys were 3510 tons against 12,058 tons in August 1923.

Canada was a buyer of 2980 tons of tin plate against 1993 tons in August last year. Of this material the United

(*Concluded on Page 790*)

Tin Plate Shipments

Holding Up Well—New Demand Dull —Japan Wants 56,000 Boxes

TIN PLATE PRICES, PAGE 771

Pittsburgh, Sept. 23.—As far as new business is concerned, the tin plate market continues to drag. Shipments are being made at about the same rate as has prevailed for several weeks past. Makers who have maintained fairly heavy operating schedules for several weeks, are manifesting some little concern over the outlook of forward buying. The backwardness of the season reduces the possibilities in connection with the corn and tomato packs, and tin plate consumption for these two outlets will be somewhat smaller than usual. This explains the recent lack of specifications from canmakers for these purposes. Specifications coming to the American Sheet & Tin Plate Co. are not in sufficient volume to permit of operations being increased much over the 50 per cent basis. Some of the smaller independent manufacturers in this territory, Canonsburg and Washington, Pa., and one here at Pittsburgh, have been on a heavier basis but the general average is in the neighborhood of 55 per cent. No inquiries have developed to create a real market test, and the official price continues unchanged at $5.50 per base box of 100 pounds, Pittsburgh, with only slight departures from that level being noted. Tin plate stock lists are growing in a number of cases.

Japanese Want 56,000 Boxes

New York, Sept. 23.—The Nippon Oil Co. of Japan is inquiring for 56,000 boxes of tin plate. Export demand for tin plate is heavy, both from Japan and other countries.

Market Levels Unchanged

Philadelphia, Sept. 23.—The leading maker here is quoting delivered prices on tin plate. Independents are quoting mill prices with freight allowed, which is equivalent to the Pittsburgh delivered price. The market here continues $5.50, Pittsburgh. Ordinary production business is quoted at $4.90 to $5.15, Pittsburgh, stocks.

Warehouse Buying Totals Better Volume

WAREHOUSE PRICES, PAGE 826

New York, Sept. 23.—A downward revision of $2 a ton in cold-rolled rounds and flats is a feature of recent developments in the local warehouse market. Rounds are now holding 4.05c per pound and flats, squares and hexagons, 4.55c. By this change, prices are brought more in line with those on hot-rolled materials. Trading is being maintained at a slightly improving rate, shapes and reinforcing bars being in particularly good demand, with also an active inquiry for galvanized sheets. With the mills getting a little more on their books, they are not seeking small lots as keenly as previously.

September Total Gains

Cleveland, Sept. 23.—Total business of iron and steel warehouses so far this September averages above that of August in most cases, but is below the same month of last year. A general demand constitutes the activity with building materials moving in especially good volume. The decree against Pittsburgh basing has not altered prices of local warehouses. One dealer quotes f.o.b. mill, freight allowed, and another f.o.b. Cleveland, freight allowed. Where competition outside of the city makes cutting necessary, prices will be named at such levels as will compete in other cities. No changes in local quotations have been made since the recent drop in cold finished products $2 a ton, to 3.90c on rounds and 4.40c, on shapes.

Prices Slightly Easier

Philadelphia, Sept. 23.—Iron and steel warehouse demand here continues to lag with prices unchanged except on iron and steel bars which now are 3.00c to 3.10c. Reinforcing bars have been cut to 2.75c to 2.85c.

Small Sales

Make Up Current Trading in Ferroalloys—Some Activity in Spiegeleisen

FERROALLOY PRICES, PAGE 771

New York, Sept. 23.—Purchases of ferromanganese are restricted almost entirely to carload lots and a total of at least 600 tons was made up of such orders the past week. As far as known, $95, duty paid tidewater, was the price obtained on all of these sales.

The more active demand for spiegeleisen continues to be reflected in sales during the past week aggregating more than 1000 tons. The market on 20 per cent spiegeleisen continues $31 to $33 furnace.

Prices of the special ferroalloys are unchanged. There have been no developments of interest in any of the alloy markets.

Interest at Low Point

Pittsburgh, Sept. 23.—Ferroalloy interest still remains at a low point. An occasional inquiry comes out for a carload or two of ferromanganese, but buyers are failing to develop anything below $95, seaboard, that being apparently the firm quotation on foreign material, either English or Norwegian. On the domestic ferromanganese, $100 seaboard base is unchanged. Shipments are going ahead, however, on $90 and $95 contracts taken some time ago. Most consumers are taking in their material; others will allow it to come forward as needed between now and the end of the year. One buyer of a small lot of imported material paid $116.50, delivered Pittsburgh territory, this past week.

In spiegeleisen, some activity recently has been noted on contracts over a 60-day period or through to the end of the year for lots of 500 to 2000 tons at a time. One contract on 19 to 21 per cent material taken last week involved 500 tons. From $31 to $32 is quoted, depending upon the grade and the quantity.

Buyers of 50 per cent ferrosilicon on contracts at $75, freight allowed, are ordering single carloads forward; one of these came through this week. The spot market is somewhat lower, down to $70, but producers who took contracts at the $75 price are not offering any concessions. No inquiries at all are developing in ferrovanadium, ferrotungsten, ferrochrome, etc.

A. M. Castle & Co. Take Over Another Plant

Chicago, Sept. 23.—A. M. Castle & Co., large iron and steel jobbers and mill representatives, have added another plant to their string of warehouses, in the recent acquisition of Berger & Carter Co., San Francisco, one of the leading jobbers on the Pacific Coast. as announced in the Sept. 18 issue of IRON TRADE REVIEW. The Berger & Carter Co., organization will continue in operation of the business and R. L. Sanford, vice president and representative of the Castle company at San Francisco will continue his interest in the management there.

The present warehouse site at Seventeenth and Mississippi streets, San Francisco, of the Berger & Carter Co., will be retained but plans are being perfected for purchase of a site for erecting a large modern steel warehouse. W. B. Simpson, president of A. M. Castle & Co., negotiated the purchase of the Berger & Carter Co.

The Castle company has moved its offices from the Monadnock building in San Francisco, to the Berger & Carter warehouse at 400 Mission street.

Plate Extras Revised

Philadelphia, Sept. 23.—The leading interest has issued a new schedule of plate extras. This revises the extras for plates less than ¼-inch thickness, or lighter than 11 pounds per square foot, over 100 inches wide. It also fixes extras for plates over 100 feet long. Independent producers are changing their extras accordingly.

Let Ore Bridge Contract

A contract for a 10-ton ore bridge has been awarded by the Baltimore & Ohio railroad to Heyl, Patterson, Inc., New York and Pittsburgh. The bridge will take the place of one at Lorain, O., wrecked during the recent tornado.

Appointed Coke Agents

Rogers Brown & Co. has been appointed sales agent for the by-product foundry and domestic coke in the state of New York made by the Semet Solvay Coke Co. at Harriet, N. Y.

To Build Southern Ovens

Pittsburgh, Sept. 23.—A recent contract taken by the Koppers Co. for by-product coke ovens involves 25 ovens for the Alabama By-Products Corp., Tarrant, near Birmingham, Ala. This makes its total installation 100 ovens.

Japan Buys Locomotives

Washington, Sept. 23.—Four electric railway and one electric mining locomotive were shipped to Japan in July, according to reports to the department of commerce. The Philippine Islands received six mining electrics and one steam locomotive. Cuba and British India were shipped five steam locomotives each, and Canada received two. Mexico purchased three electric railway locomotives, and British South Africa and Costa Rica received one electric mining locomotive each.

Recast Steel Market To New Lines

Possibilities of Important Economic Consequences Are Seen in Abandonment or Modification of Pittsburgh Basing Point Practice—Mill Quotations Not To Be Uniform—No Price Supervision Contemplated

COMMISSION BELIEVES SEVERE EFFECTS UNLIKELY

WASHINGTON, Sept. 23.—What sort of a situation is likely to be created by the elimination of the Pittsburgh plus method of basing price quotations in the iron and steel markets and the possible economic complications that may ensue, have become the subject of considerable speculative inquiry. As a result of the reply of the United States Steel Corp. and subsidiaries Sept. 17 indicating their compliance with the cease-and-desist order against Pittsburgh plus, handed down by the trade commission July 21, the industry is facing some most interesting possibilities in a market and economic way.

Some doubts and fears are expressed. Many believe that the commission in bringing about the elimination of Pittsburgh plus may find itself running counter to many established customs of trade and perhaps laws of economics which raise a number of questions and possibilities of difficulty.

The federal trade commission is eminently pleased with the wording of the Steel corporation's reply. It is felt in trade commission quarters that the corporation thus has expressed its willingness not only to comply fully with the letter and the spirit of the cease-and-desist order, but the fact that the National Tube Co. also was included in the report of compliance, when no case was made against the latter as regards the Pittsburgh basing point quotations on tubular products, is indicative to the commission that the respondents are willing to meet the requisite terms more than half way.

THE situation expected to develop as the result of the erasing of the Pittsburgh plus system from the steel markets, as viewed by the federal trade commission is as follows:

1. **No fear need be held that elimination of Pittsburgh plus will disturb the steel market unduly, despite the fact that many changes in marketing methods will result. Abrupt price changes have not been demanded nor expected.**

2. **Base prices of plates, shapes and bars in the Chicago district may be expected to continue at a higher level than the Pittsburgh mill prices for some time, although prices on wire products and sheets at Chicago are expected to be lowered soon. Eventually, it is the belief in the trade commission group, that Chicago base prices generally must be lowered, due to decreased costs of production.**

3. **No supervising method will be maintained by the commission to see that the cease and desist order is complied with in good faith, although if indications should persist in the future that discrimination in prices is existing, investigation would be made.**

4. **A new price situation will develop through a gradual "feeling out" process in the markets and the mill prices will adjust themselves to certain levels under the so-called economic principle of the "process of accommodation," and will not be held on any level through artificial means.**

5. **From the trade commission viewpoint, the fly in the ointment of the whole Pittsburgh plus controversy—the alleged parcelling out of market territory between mills in different localities by an artificial arrangement of price conditions due to transportation costs—will be removed so that more actual competitive conditions may be restored; this will result in some inconveniences, it is held, where uneconomic methods had been developed, even though these methods may have had their origin in absolutely natural economic causes, such as proximity to ore and coal.**

Pipe Voluntarily Included

While tubular products were not included in the cease-and-desist order, the Steel corporation's expressed willingness to abandon the present method of quoting basing discounts on Pittsburgh lists creates a situation in which the commission expects a new price adjustment of pipe. It was announced by the trade commission after the report had been received from the Steel corporation that R. V. Lindabury, chief counsel of the Steel corporation, in a letter to the commission stated also that even subsidiaries not affected by the order will do away with the Pittsburgh basing system, indicating the National Tube Co., which was named as a respondent in the original complaint but was not included in the cease-and-desist order. The commission attorneys, after introducing some testimony covering pipe quotations with relation to Pittsburgh plus, did not try further to make a case on tubular products. It was regarded that the bulk of pipe was produced in the Pittsburgh district and in the East, and than in the case of other rolled products. William B. Schiller, president of the National Tube Co., has signed the Steel corporation's compliance report with other subsidiary heads, and President James A. Farrell.

The Lorain Steel Co., also not included in the cease-and-desist order, produces special railroad track material. The Clairton Steel Co. and the Union Steel Co., other subsidiaries not included in the final cease-and-desist order, are leased plants. It is pointed out that the Steel corporation in its decision to abandon Pittsburgh plus quotations at all its mills thus is looking to complete uniformity and price stability throughout its organization, probably holding it more convenient to make a general readjustment.

The cease-and-desist order, while not mandatory to the independent steel mills, is expected to be followed and observed throughout the industry. The commission is leaving the observance of the order up to the industry without the inconvenience of constant supervision, which is not authorized the commission.

Price Uniformity Not Expected

It is neither the intent nor the expectation of the trade commission that f.o.b. mill prices necessarily must show uniformity. It is recognized, of course, that this situation cannot be expected to result. With Pittsburgh plus abolished, some mills, depending upon their location, must develop other tributary market territory to take the place of markets that now will be less advan-

tageous. It is pointed out that the Minnesota Steel Co., at Duluth, for instance, in order to compete successfully at Milwaukee with Chicago mills, must meet a considerable freight differential. The freight rate from Chicago to Milwaukee on steel bars is 8 cents per 100 pounds and the corresponding rate from Milwaukee to Duluth is 30.5 cents. In other words, on steel bars quoted at Duluth at $40 a ton, a concession to $35.50 a ton would have to be made at Milwaukee to meet competition. Of the approximately 100,000 tons of steel bars produced annually at the Duluth plant of the Steel corporation, for several years, more than 50 per cent was sold in Illinois and Indiana, the trade commission exhibits stated. Much of this trade now is likely to be lost and the Duluth mills face the necessity of developing additional market territory—in the Duluth and other western territory as well as in Canadian points.

The mills, warehouses and fabricating plants using delivered prices in the future must show clearly, under the terms of the order, the actual transportation costs of such products in the sales contracts or the invoices. Again, no supervision will be sought over delivered prices by the commission unless it appears that an artificial price system is being maintained or that undue discrimination exists.

The findngs of the federal trade commission on July 21 pointed out that discrimination of prices is to be gaged by the variations permitted in section 2 of the Clayton act which permits discrimination in price due to differences in grade, quality, quantity of goods or discrimination in good faith to meet competition or to aid in selecting customers in bona fide transactions. Some question as to the scope of the meaning of these provisions has been aroused, inasmuch as "meeting competition in good faith" has not been tested in the courts.

The statement of the Steel corporation and subsidiaries that they will conform to the order insofar as it is practicable to do so" is not taken by the trade commission as having special significance. It is recognized that some difficulties in adjustment will occur, and that the corporation attorneys in wording the reply thus merely erected the proper safeguards.

It is pointed out that the commission regards the Pittsburgh plus system as having reprived some mills of their natural advantages and that the removal of this price method entirely must create some changes in the market situation.

Position of Competitive Users Affected

CHICAGO, Sept. 23.—Abandonment of Pittsburgh plus in the pricing of wire and sheets in this district will effect more than a revision of selling prices. A more important consequence, according to the outlook, will be a shifting of relationship between competitive users of these products.

The American Steel & Wire Co.'s new prices contemplate a Pittsburgh-Cleveland base, with shipments from the Joliet, Dekalb and Waukegan, Ill., mills quoted $2 over this base and delivery in Chicago proper $3 over this base. The extra dollar for Chicago delivery does not quite meet the freight from these western mills to Chicago.

By quoting plain wire 2.50c, Pittsburgh-Cleveland, against a former 2.55c, Pittsburgh, the new price delivered in Chicago is 2.65c compared with a former 2.89c. On some wire products these western mills will be unable to supply the demand, and it is stated that this surplus demand will be met from the nearest mill, and priced there.

Although the American Sheet & Tin Plate Co. has not yet announced a new price schedule, this surplus demand apparently will be more in evidence in sheets than in wire. Requirements that cannot be filled by makers in the Chicago district will have to be placed with mills to the East, and priced there. At this stage all is conjecture, but the question is being asked, will this excess demand tend to increase the market at Chicago until it approximates the Pittsburgh plus level?

Under the Pittsburgh plus regime all users of plain wire in the Chicago district received the same price, barring such differential as the size of the business warranted. Strict adherence to the proposal of filling surplus requirements at a distant mill, plus the freight, would set up a decided difference in the cost of raw material to competing buyers. In the case of sheets, with local consumption far in excess of productive capacity, the mills could pick their customers and specifications.

That the abandonment of Pittsburgh plus will precipitate a much more revolutionary change than many of its opponents thought is evidenced by the efforts of some Chicago district users of products affected to place their names on the order books of local mills. Competition among producers will be localized. Sheetmakers in Ohio, for example, will find competition in the Chicago district more limited, up to the capacity of the district's mills.

How misleading has been some of the propaganda against Pittsburgh plus is seen from the somewhat general impression prevalent among small consumers that all steel products would be reduced $5 to $7 a ton. Reinforcing bar sellers, for example, have had to combat demands that bars be reduced. With soft steel bars, plates and shapes having been sold on Chicago base since 1921, probably 80 per cent of the steel consumption in the Chicago district is not affected.

Steel sheets, wire and wire products are the chief products to feel the new order at this time. Pipe is largely exempt because so little is produced in the Chicago district, but with the completion of the new Gary mill of the National Tube Co., the situation will take on a new complexion. Tin plate consumption is not high here.

Generally speaking, the feeling is general here that the consuming territory east of Pittsburgh has been preempted by the Bethlehem Steel Co. and that west of Pittsburgh by the

High Spots in Basing Point Issue

Jan. 24, 1919—*Western Association of Rolled Steel Consumers organized.*

Aug. 1, 1919—*Western association files application for complaint against United States Steel Corp. and independents*

July 24, 1920—*Application for issuance of complaint denied by trade commission.*

Aug. 1, 1920—*Western association applies for rehearing.*

Sept. 20, 1920—*Application for rehearing granted.*

April 30, 1921—*Federal trade commission issues complaint against United States Steel Corp. and subsidiaries.*

March 29, 1924—*Examiner's report issued, holding Pittsburgh plus is unfair method of competition.*

July 23, 1924—*"Cease and desist" order issued by trade commission.*

Sept. 16, 1924—*Steel corporation notifies trade commission of its intended compliance with order.*

Sept. 22, 1924—*Steel corporation begins new method of quoting prices on delivered or mill basis.*

Steel corporation subsidiaries. Producers in the Mahoning valley are thought left without any consuming territory. Construction of plants in the Chicago district seems requisite to an effort for western business. That competition between independents and the corporation will be more uneven, because in all cases the corporation's costs are credited with being as low, if not lower, than the smaller producers, is the general impression.

The corporation is generally credited with a desire to work out the new conditions equitably. In view of the surplus of demand over production in the Chicago territory on some products, discrimination between consumers is practically made mandatory by the federal trade commission's order. Each invoice is to show the mill price and the freight. Many consumers will have different prices than their competitors. Lower prices at the Chicago mills will enable the latter to compete more sharply with Pittsburgh for business to the north and south of Chicago.

Many Problems Must Be Worked Out

PITTSBURGH, Sept. 23.—Numerous problems remain to be worked out by the steel industry in its abandonment of the Pittsburgh plus method of quoting prices, since independent makers apparently are going to follow the Steel corporation in complying with the cease-and-desist order of the federal trade commission. So far as Pittsburgh mills are concerned, the plan evidently is to discontinue the Pittsburgh base as such, but to maintain prices f.o.b. mill plus the freight to destination, quoting a delivered price to the customer.

Opinion is divided as to the ultimate effect the cessation of the Pittsburgh-plus plan will have. Some believe it will mean the localization of the Pittsburgh manufacturers' markets, greatly restricting their selling area. Others believe Pittsburgh manufacturers will go out of their natural markets to compete with makers elsewhere, by naming delivered prices which will absorb a greater or less portion of the freight to those points.

Makers of cold-finished bars in this vicinity are planning no radical departure from their practice of several years of naming delivered prices. They have encountered a Chicago base figure for three or four years past and have successfully competed with it on numerous occasions. For instance, their product is obtainable in Detroit at no greater cost to the user than is material from Chicago mills. Their prices will be f.o.b. their plants with freight added to destination to be absorbed by them when necessary to meet competition.

The Jones & Laughlin Steel Corp. will continue to quote f.o.b. Pittsburgh as will numerous other district producers. When this interest's Chicago district plant is erected, it will meet western competition from that point, the same as does the Youngstown Sheet & Tube Co. now on the products of its Indiana Harbor plant. The Youngstown Sheet & Tube Co. will as always, absorb the freight from Youngstown to Pittsburgh when quoting Pittsburgh district buyers, in competing with Pittsburgh district mills.

The Concrete Steel Co., Youngstown, O., has commenced to name figures on concrete bars f.o.b. Youngstown, with freight added to destination which in many cases has the identical results as if it continued to quote a Pittsburgh base.

The Carnegie Steel Co. and other units of the United States Steel Corp. are preparing to carry out the latter's

(*Concluded on Page* 789)

How Corporation Expressed Its Compliance

PURSUANT to the order made by the federal trade commission dated July 21, 1924, the respondents, United States Steel Corp., American Bridge Co., American Sheet & Tin Plate Co., Carnegie Steel Co., National Tube Co., American Steel & Wire Co., Illinois Steel Co., Minnesota Steel Co., and Tennessee Coal, Iron & Railroad Co., reports as follows:

1. Respondents, without admitting the validity of said order or the jurisdiction of the commission to make the same, have determined to conform thereto, and will hereafter conform thereto, in the sale of their various products, in so far as it is practicable to do so.

2. Respondents have abandoned the Pittsburgh plus system, as defined in said order, throughout their various organizations and will not hereafter make use of the same.

3. Respondents will not quote for sale or sell their rolled steel products upon any other basing point than that where the products are manufactured or from which they are shipped.

4. Sales from manufacturing plants, fabricating plants and warehouses will be made f.o.b. plant or warehouse, or at delivered prices, as occasion may offer. In all cases of sales at delivered prices the contract of sale or the invoice will clearly and distinctly indicate how much is charged for the steel products sold f.o.b. the producing or shipping point and how much is charged for the actual transportation of such products, if any, from such producing or shipping point to destination.

5. All f.o.b. selling prices, whether at the mills, warehouses or fabricating plants, and all delivered prices, will be nondiscriminatory within the meaning of the second section of the Clayton act, but will be subject to the variations permitted by said act.

UNITED STATES STEEL CORP., J. A. Farrell, president; AMERICAN BRIDGE CO., Joshua A. Hatfield, vice president; AMERICAN SHEET & TIN PLATE CO., F. W. Pargny, president; CARNEGIE STEEL CO., H. D. Williams, president; NATIONAL TUBE CO., William B. Schiller, president; AMERICAN STEEL & WIRE CO., William J. Palmer, president; ILLINOIS STEEL CO., E. J. Buffington, president; MINNESOTA STEEL CO., G. B. Sheldon, vice president; TENNESSEE COAL, IRON & RAILROAD CO., Geo. G. Crawford, president.

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Charles J. Stark, - - - - - - - - - - - Editor
Earl L. Shaner, - - - - - Engineering Editor
John D. Pease, - - - - - Advertising Editor

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BOSTON - - - - - - - - - - - 426 Old South Bldg.
CHICAGO - - - - - - - - - - 1147 People's Gas Bldg.
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FOREIGN OFFICES
BIRMINGHAM, ENG. - - - - - - - Prince's Chambe s
LONDON, ENG. - 2-3 Caxton House, Westminster, S. W. L.
PARIS, FRANCE - - - - - 23 Rue de la Bienfaisance
Cable Address IROTRAPEN, London, IROTRAPRI, Paris

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Pittsburgh Plus Passes; What Now?

CONSIDERATIONS of public policy undoubtedly have been the moving influence dictating the final decision of the Steel corporation to accept without further contest, the order of the federal trade commission to abandon the practice of quoting steel prices on a Pittsburgh base. The standing under the law of the established method of figuring prices which has held sway throughout the steel industry for many years, consequently still is left undetermined. On this point the language of the corporation in its expression of willingness to comply with the commission's order is significant. It neither admits the validity of the order nor the jurisdiction of the commission to issue it.

As a consequence of the Steel corporation's act the industry now finds itself in the initial stages of a process of readjustment not only of pricing methods but seemingly of competitive lines. Independent companies which equally with the leading producer have followed the principle of Pittsburgh plus in their quotations find themselves obliged to conform to the new conditions. What will be the effects of this altered method of quoting prices so far as the individual user of steel is concerned and beyond that as to the underlying economic structure of the steel industry?

Indications developed during the past few days, although not conclusive, have been sufficient to point that the steel market is to be made from many bases, that is mill points, instead of one or two bases as in the past. The general principle seems to be that material will be billed where it is made to which will be added the actual cost of delivering it where it is to be used. In this situation, however, the position of Pittsburgh as a commanding mill center because of the extent of its capacity, remains unaffected. This means that the Pittsburgh district will continue to exercise an important regulating influence upon steel prices and the general market regardless of whether the function it has exercised as an open basing point for many products, will have ended. This is because competitive conditions and available tonnage in the end will determine the price regardless of bases, as actually has been the case with a single Pittsburgh base. This should be essentially true in times of excessive demand when the local and nearby mills are filled up, forcing the buyer to reach out for a distant source of supply. The Chicago district with normal consumption in excess of productive capacity is illustrative of this condition. A Chicago base or a nearby mill base will mean little or nothing to those consumers who are unable to obtain their supplies from these quarters.

In general, a number of buyers, particularly in the West, will profit in some degree from the establishment of numerous mill bases because already some of the latter have been placed lower than the former Pittsburgh base plus the freight to that point. In many localities, however, mill prices have been made simply to conform with the previous Pittsburgh basis.

It would be wise for buyers of steel not to entertain too rosy expectations of large reductions in their material costs, for these are not likely to be realized. Many of them doubtless have been led to believe their saving would be equal to the amount of the Pittsburgh freight they formerly paid. This will not be true in the present readjustment and is not likely to be unless competition forces it. The statement that the trade commission does not expect uniform mill prices, necessarily, is interesting in this connection.

The new competitive conditions are likely to have an important effect upon the direction and form of future expansion in the steel industry. The strategic advantage of mill locations nearest to main consuming areas where assembling costs are not abnormal, is emphasized. This already has led to comment that the trade commission's decree, in the end, will have proved of great advantage to the Steel corporation because of its many and widely scattered works.

Doubtless many days will have elapsed before the steel market shall have been able to readjust

itself completely to the new situation and its many possible ramifications. It may be accepted as certain, however, that whatever the changes that are finally and permanently fixed upon the steel industry, these will be shaped in accordance with economic law and not simply because of the fiat of a governmental body.

Coke Points the Way

COKE as a reliable indicator of fundamental changes in the iron and steel industry adds its weight to the evidence of a turn for the better. Production for August registered the first increase in months. The increase came entirely in by-product coke, the beehive output decreasing from July. Statistics have shown that in periods of depression net tons of by-product coke exceed gross tons of pig iron. This has been true and still is true, but the divergence is narrowing, indicating a pickup in general business.

The figures more and more demonstrate by-product coke has assumed the position formerly held by beehive fuel in the metallurgical industry. Hence the fluctuations of by-product production should be watched for their trade significance. During the first half of September many more ovens were put into service and coke output, both beehive and by-product, has continued to increase steadily. Pig iron production also is on the increase and the normal relationship of coke and iron may be expected to be resumed soon.

Why Nonferrous Prices Are Weak

AN INTERESTING movement has taken place in the nonferrous metal markets in the past few weeks. Metal prices have been reactionary, whereas at first thought it would seem as though an upward trend would be in order now, if ever. Consumption of copper, lead, tin, zinc, antimony, aluminum and other metals in this country is increasing in keeping with the gradual but steady upward trend in general business activity. Still more important, the London agreement on the Dawes plan has put Europe on the way to economic recovery and the greatest impediment to bull markets in metals over the past six years has been removed. Europe's economic conditions are improving and its consumption of the metals is expanding steadily. Yet in the face of all this metal prices have declined since late August.

The reason for this apparently paradoxical condition, however, is easily found. The metal trade on both sides of the water long ago recognized the fundamental change which would be created in the world metal markets by an understanding among the powers on the reparations and other political questions. Beginning with early July, when it became probable that an agreement would be reached, well informed traders and dealers bought metals heavily in this country and abroad, anticipating the agreement. Following their lead, many large consumers also bought metals against their expected forward requirements. Prices responded by advances all through the list, beginning with July 10 and reaching a high point about the middle of August.

During this period copper advanced 1½ cents a pound; tin, 8 cents; lead, 1 cent; zinc, ½ cent; antimony, 2 cents; aluminum, ½ cent. When the agreement was reached, the good news had been discounted for the immediate future. Holders of contracts on speculation then wanted to take their profits, but they found their market narrow. World consumption has not broadened immediately; the expansion is sure to be gradual. Since contracts have to be specified or otherwise taken up, speculative holders cannot wait on world consumption. The fact that many consumers had bought metals on the rise further restricted the market for resale contracts. Thus, pressure of speculative offerings has been a factor in some of the more important metals, especially copper. It is noticeable, however, that the large producers of metals have been willing to wait on their market.

Defense Day Makes for Economy

THAT feature of the Defense day mobilization program portraying the government distributing with lavish hand contracts for billions of dollars worth of war material has been misinterpreted by some pacifists, who profess to see in the performance a reason why the industrialists of the country favor preparedness.

The point must not be overlooked that a far greater expenditure would be required if this nation became involved in war and was unprepared; the sum represented by the waste and loss incurred in an emergency against which the nation had failed to protect itself would make up a considerable proportion of the total cost. Many of the extravagances complained of during and since the United States' participation in the World war were due to the extraordinary circumstances thrust upon the government at an unguarded moment.

It is greatly to the credit of all industries that they are co-operating whole heartedly with the government for prompt and efficient organization of their resources in case of an unwarranted aggression. Efficiency in precautionary measures cannot be attained without some test; we have known that ever since our school-day fire drills. Mobilization practice is a national fire drill.

In New York on Sept. 12, called Defense day evidently so not to shock the sensibilities of those whom the word "Mobilization" would be synonomous with war, the representatives of the principal industries of the country were gathered, with others from leading technical and engineering or-

ganizations. As chairman of the advisory board of the New York ordnance district, E. H. Gary received certain orders from the government for the material and arrangements necessary to equip it for war. The chairman immediately placed himself in touch with manufacturers, transportation leaders, bankers, etc., determined exactly what facilities were available without fail, and allocated the government's requirements. In one day was accomplished that which required many months at the time the United States entered the World war. The government not only had a complete record of what could be accomplished by the individual industries, but assurance that these industries were prepared to discharge their obligations. If billions of dollars worth of contracts were distributed to the manufacturers, theoretically, through this move, then many millions of dollars must have been saved by the fact that it took one day to change the industrial peace organization into a war machine, each unit knowing its place and ready to perform efficient service.

Yesterdays in Industry

Trade and Technical News from IRON TRADE REVIEW 10, 20 and 30 Years Ago

September 20, 1894

MUCH discussion of means to obtain trade with South American countries is being carried on. English manufacturers hold the bulk of this business, with Germans cutting in. Americans it is declared, have not learned how to sell to foreigners.

* * *

Thomas Snow, president of the Challenge Windmill & Feed Mill Co., Batavia, Ill., predicted increasing demand for steel windmill towers and that wooden towers would be displaced in a few years.

* * *

Blast furnace figures from the American Manufacturer show that Sept. 1 of 479 stacks 168 were active and 311 out of blast. This compared with 135 active and 344 out of blast the previous month.

* * *

September 22, 1904

PRICE reductions by the billet and merchant bar pools brought billets from $23 *to* $19.50, *sheet bars from* $24 *to* $21.50 *and the bar schedule* $1 *lower. This reduction was considerably modified by a change in method of adding freight. The new agreement provided for adding actual freight to delivery point. Previously only* $1 *per ton had been added to the Pittsburgh price for Chicago delivery, while* $3 *was the full rate. This made the actual reduction on billets at Chicago only* $1.50. *Wheeling and Youngstown were the only cities retaining the same base as Pittsburgh, Ashland, Ironton, Lorain and Johnstown being eliminated by this agreement.*

* * *

The Republic Iron & Steel Co. had decided to build a structural and sheet bar mill at Youngstown.

Philip W. Moen, Worcester, Mass., formerly a vice president of the American Steel & Wire Co. and general manager of the Washburn & Moen plants, died at the age of 47 years.

* * *

September 24, 1914

UNDER stress of war demand England began to show a need for American billets and other forms of semifinished steel. The steel market in the United States is beginning to reflect the actual and prospective requirement from Europe and neutral countries and is stronger.

* * *

Characterizing current discussion of methods to obtain South American trade as purely hysteria and useless, the Pittsburgh foreign trade commission counseled moderation and a careful and well-planned campaign as the only means to obtain a foothold.

* * *

Frank Baackes, vice president and general sales manager of the American Steel & Wire Co., predicted good business for the near future since America has what Europe needs and is outside the war area.

Some Prices from the Past

	Sept. 20, 1894	Sept. 22, 1904	Sept. 24, 1914
Basic, Pittsburgh	....	12.50	13.90
Bessemer, Pittsburgh	11.75	12.60	14.90
No. 2 foundry, Pittsburgh	10.50	12.50	13.90
No. 2 foundry, Chicago	10.00	13.50	13.25
Lake Superior, Chicago	14.75	15.00	16.00
No. 2 southern, Birmingham	....	9.50	10.00
Bars, steel, Pittsburgh	....	1.30c	1.20c
Bars, steel, Chicago	1.25c	1.40c	1.38c
Heavy melting steel, Pittsburgh	....	12.25	11.50
Heavy melting steel, Chicago	6.00	10.00	9.25

Letting the Reader Speak

EVERY week the mail brings to the editor of IRON TRADE REVIEW various communications from subscribers and interested readers which are of an original and informative character. Many of these letters in themselves are real contributions to discussions of economic, technical or commercial subjects which have been introduced by some article or have been engrossing the attention of minds in the iron and steel and related industries. Not a few of them may be put in the inspirational class.

Many of these communications have been deserving of publication but the compact and concise way in which the editorial contents of IRON TRADE REVIEW are arranged each week, has made it impossible to provide the necessary space.

To insure the readers of IRON TRADE REVIEW the benefit of the information and the knowledge displayed and of the comment expressed in these communications, the position on this page occupied by this announcement will be given over to the publication each week of one letter which is deemed either the most timely, the most interesting or the most informing of those recently received. All communications to the editor of IRON TRADE REVIEW in the future will be carefully read and sifted with their use for this purpose in view.—THE EDITOR.

Recast Steel Market

(*Concluded from Page 785*)

intention, as expressed in its acceptance of the federal trade commission's order. Just how this is to be done remains to be worked out in all its details in connection with numerous individual cases. In general, however, prices f.o.b., mill will be quoted and the freight added to destination. This at many times during the past several years has been the way various market conditions have been met.

The American Steel & Wire Co. effective Sept. 22, established basis of 2.50c, Pittsburgh and Cleveland on plain wire and 2.75c on nails with Joliet, Dekalb and Waukegan, Ill., taking a $2 differential and Chicago $3. At Pittsburgh, this represents a reduction of $1 from the old schedule and at Cleveland $3 since Cleveland formerly took a price $2 a ton above Pittsburgh. The National Tube Co. is working out a new schedule which it is understood provides for several mill bases.

Eastern Independents Quote New Basis

NEW York, Sept. 23.—The "Pittsburgh plus" method of quoting steel prices has disappeared in the East as a result of the assurance by the United States Steel Corp. and its subsidiaries to the federal trade commission that they will obey the order to cease and desist from the practice.

Last Thursday, President E. G. Grace of the Bethlehem Steel Co., announced the attitude of his company in the following statement:

"The United States Steel Corp., having announceed its intention to abandon the use of the Pittsburgh base, Bethlehem Steel Co., naturally, in conducting its steel business will no longer quote prices using Pittsburgh as a basing point."

The other eastern steelmakers have made no announcements, but informal expressions from them indicate that they all have ceased to quote on a Pittsburgh basis.

Present methods of quoting in the East vary somewhat. They are all alike in one respect. That is, the Pittsburgh base is not apparent, but it is there just the same. In some cases, the quotations are f. o. b. mill. In others they are delivered. Numerous instances have appeared the past week where the price was quoted f. o. b. mill with freight allowed to the consumer, and where the price was obtained by taking a Pittsburgh price and adding to it the freight from Pittsburgh to destination. A price at which plates were sold to one New York buyer the past week was 2.04c base mill, freight allowed; this price was computed by using 1.70c as the Pittsburgh price and adding to it 34 cents per 100 pounds, the carload freight from Pittsburgh to New York.

While the decision to observe the federal trade commission's cease-and-desist order has been obeyed not only by the Steel corporation but by the other factors in the trade the conditions of competition remain the same. As long as they continue as at present, no matter how the price actually is quoted, the eastern prices will continue to be based on the Pittsburgh competition. It is too early to say just what method of quoting will become customary in the East. But because Pittsburgh, by reason of its competition, still is the determinating factor, it is regarded likely that the method detailed above, of quoting a delivered price equivalent to a Pittsburgh delivered price, will find considerable favor.

There has been a growing tendency for years in some parts of the country, notably the Chicago district, to get away from the Pittsburgh base. Eastern makers hold that this tendency has had its root in economic reasons. The law of supply and demand dictates the prices obtained for steel, and it is at the points of consumption that the competition is reflected. Since Pittsburgh became established as a steel center, eastern steelmakers have looked to Pittsburgh for their principal competition in selling to eastern consumers.

The cease and desist order makes no difference to makers of some of the more highly finished products. It has been customary, for instance, to sell spikes f.o.b. mill. The business in rerolled light rails has been mostly on a mill basis. Heavy rails always have been sold on a mill base. It is in the primary products such as sheets, shapes, plates and bars that the method of quoting is most affected.

Say Fundamentals Are Not Affected

CLEVELAND, Sept. 26.—Steel producers in the Cleveland district are unanimous in the statement that whatever changes in the industry result eventually from the relinquishment of the Pittsburgh plus practice, fundamental market conditions will be unaffected, and consumers will not be able to purchase any more advantageously.

Some confusion is anticipated in making the change in methods of quoting and billing material, during which time buyers might profit as a consequence of the sharp competition now prevailing, but steelmakers believe this will be only a temporary phase.

Some of the steel interests in the Cleveland district for several months have been quoting prices, f.o.b. mill or delivered. The Pittsburgh or valley prices have figured in their calculation, but in the actual method of quoting on material they anticipated the change.

One large steel producer in the Cleveland district has practically decided to change to a delivered price basis.

"Compliance with the federal trade commission's order probably means that most quotations hereafter will be on such basis," a representative of the company said. "For example: If a buyer in this territory wants some material he will want to know first of all what the price will be delivered. He will not want some quotations on an f. o. b. mill basis, and others on a delivered basis. If they were all on a mill basis he would not want to be put to the trouble of figuring out the freight rates. The logical development will be quotations for material, delivered. It means that the steel sellers will keep in closer touch with freight rates; more like the pig iron sellers, whose freight tables always are at hand.

"Competitive quoting will not affect prices in the least; all sellers will be feeling their way along for a while but it will be just as easy for one manufacturer to determine what his competitors are doing as if the Pittsburgh base system continued in effect."

The Florida East Coast railway has ordered from the General Railway Signal Co., four interlocking switches of four levers each for installation at Fort Pierce, White City, St. Augustine and New Smyrna, Fla.

Current Iron and Steel Prices of Europe

Prices Converted into Dollars at Rates of Exchange, September 22

	British Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgian and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Ports	
Export Prices f. o. b. Ship at Port of Despatch—By Cable	£ s d			Francs		Francs	£ s d	
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$19.02	4 2 0*	$17.19	325	$16.80	340	$22.50	4 17 0
Basic	18.56	4 0 0	17.46	330	16.80	340	25.52	5 10 0
Basic-bessemer	21.46	4 12 6†	17.19	325	16.30	330	22.50	4 17 0
Hematite, Phosphorus 0.02-0.05	21.11	4 11 0	22.48	425	.....	....	26.68	5 15 0
SEMIFINISHED STEEL								
Billets	$32.48	7 0 0	$24.33	460	$2.42	460	$26.68	15 5 0
Wire rods	51.04	11 0 0	32.80	620	29.64	600	32.48	7 0 0
FINISHED STEEL								
Standard rails	$39.44	8 10 0	$29.10	550	$35.82	725	$30.16	6 10 0
Merchant bars	1.76c	8 10 0	1.30c	540	1.18c	525	1.28c	6 2 0
Structural shapes	1.66c	8 0 0	1.25c	520	1.18c	525	1.28c	6 2 2
Plates, ship, bridge and tank	1.86c	9 0 0	1.55c	730	1.42c	635	1.53c	7 5 0
Sheets, black, 24 gage	2.69c	13 0 0	2.76c	1,150	2.63c	1,175	2.60c	12 7 7
Sheets, galvanized, 24 gage, corrugated	3.83c	18 10 0	4.03c	1,770	4.82c	2,150	4.63c	22 0 0
Bands and strips	2.28c	11 0 0	1.55c	730	1.74c	775	1.74c	8 5 0
Plain wire, base	2.49c	12 0 0	2.11c	880	2.13c	950	2.00c	9 10 0
Galvanized wire, base	3.21c	15 10 0	2.59c	1,080	2.69c	1,200	2.31c	11 0 0
Wire nails, base	3.00c	14 10 0	2.42c	1,010	2.24c	1,000	2.63c	12 10 0
Tin plate, base box 108 pounds	$5.45	1 3 6	.....	....	.....	....	$6.26	1 7 0

Domestic Prices at Works or Furnace—Last Reported								Renten Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$19.37	4 3 6	$16.13	305(2)	$17.04	345	$21.16	92
Basic pig iron	18.56	4 0 0	16.13	305(1)	16.30	330	24.15	105
Furnace coke	4.64c	1 0 0	7.94c	150	7.66c	155	6.21c	27
Billets	32.48c	7 0 0	24.07c	455	24.70c	500	24.15c	105
Standard rails	1.76c	8 10 0	1.20c	500	1.34c	600	1.25c	120
Merchant bars	1.86c	9 0 0	1.28c	555	1.22c	545	1.22c	117
Shapes	1.86c	9 0 0	1.21c	505	1.20c	535	1.20c	115
Plates, ship, bridge and tank	1.97c	9 10 0	1.55c	730	1.47c	655	1.41c	135
Sheets, black, 24 gage	2.50c	14 0 0	2.76c	1,150	2.74c	1,225	2.29c	220
Sheets, galvanized 24 gage, corrugated	3.83c	18 10 0	4.03c	1,770	4.87c	2,175	4.17c	400
Plain wire	2.49c	12 0 0	2.42c	1,020	2.13c	950	1.72c	165
Bands and Strips	2.38c	11 10 0	1.58c	740	1.79c	800	1.72c	165

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £1 0s 0d ($4.64) f. o. b. Ferromanganese, £13 10s 0d ($62.64) f. o. b. The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

British Exports Less

(*Concluded from Page 781*)

States of America bought only 31 tons against 217 in the previous August. Great Britain received 2,153 tons of pig iron from America against 1,968 tons the previous August.

The value of general exports for August was £66,288,294 compared with £71,283,289 in July and £60,103,360 in August 1923.

Total imports during August were valued at £102,196,492 compared with £108,115,498 in July and £88,420,081 in August last year.

Belgian - German Trade Increased 100 Per Cent

European Staff Special

Brussels, Sept. 13.—The examination of Belgian import and export figures for iron and steel products during the first six months of this year indicates a considerable difference in favor of the tonnage exported compared with the corresponding period in 1923. The considerable depreciation of the Belgian franc which occurred in February and March has enabled Belgian exporters to compete successfully in many markets particularly against Great Britain. Large tonnages of Belgian steel have been sold since the beginning of this year in England. Toward the end of August British importers had a good tonnage in stock and the volume of business which the Belgians have been doing with Great Britain has fallen off.

During the first six months of 1924 the business between Belgium and Germany has increased about 100 per cent. The tonnage of coke imported from Germany into Belgium during the first half of this year was 968,571 metric tons compared with 282,568 tons during the first half of 1923.

Imports of German pig iron and ingots have also increased from 7001 tons in the first six months of 1923 to 98,049 tons in the first half of this year.

On the other hand, exports of semifinished steel from Belgium to Germany were 106,331 tons during the first six months of 1924 and exports of finished steel were 64,942 tons compared with 51,087 tons and 35,308 tons respectively in the corresponding period of last year.

Iron and steel trade between Belgium and France has been entirely in favor of the latter country.

Metric Tons

	First six months 1923	1924
Imports		
Coke	493,851	1,179,901
Pig iron	134,811	195,214
Iron scrap	58,508	95,279
Exports		
Semifinished steel	225,513	338,971
Bars and small shapes	481,735	711,238
Beams	90,180	120,765
Rails	72,236	131,344
Plates and sheets	85,732	128,157
Wire nails	32,077	35,337
Other wire products	30,592	37,296

Middlesbrough Pig Iron Exports at Low Point

European Staff Special

Birmingham, Eng., Sept. 23.—Exports of pig iron from the port of Middlesbrough during August established a low record for the year, totaling 11,464 tons. This compares with 48,264 tons during May and 20,161 tons in July. The United States reappears in the list, after an interval, as a buyer of 1080 tons. Belgium was the largest customer taking 3413 tons and Germany 1205 tons.

During the month two blast furnaces in the district were blown out, reducing the number at work to 43, comprising 12 producing ordinary Cleveland iron, 15 hematite and 16 other kinds. There was some improvement in coastwise deliveries, British buyers taking 18,501 tons.

For manufactured iron and steel, better figures were obtained, the total of steel exported being 39,100 tons against 31,580 tons in July. When the coastwise shipments are included the total was 52,557 tons compared with 41,162 tons in July and 47,982 tons in June.

The effect of the new duties in India is again apparent although the eastern dominion heads the list taking 9922 tons. The combined purchases by the South American republics reached the largest total 7264 tons this year.

The Business Trend

September 25, 1924

BY JOHN W. HILL, FINANCIAL EDITOR

FALLING interest rates in early autumn at the height of the crop moving season is an extraordinary spectacle in this country. That is precisely what is happening this year, however. Not since 1907 have rates been so low in September as now.

Last week call money on the New York stock exchange went begging at 1½ per cent. Ninety-day commercial paper in New York is down to 3 per cent. Bonds are firmer and stocks are responding to the impetus of cheap money. Neither the undoubted expansion of trade nor unusually heavy wheat marketing has noticeably taken up any of the slack in credit.

In fact, developments in agriculture have had the opposite effect from the traditional one upon money. The exceptionally good wheat yield and high prices are enabling farmers to liquidate their bank loans. They are also depositing money in the bank and idle funds are piling up in the West.

Gold Supply Large

Fundamentally the money ease is due to the immense hoard of gold impounded in this country. The summer's business letdown also helped to create unemployed credit. Forces tending to cause more normal money rates are beginning to operate, but they are not likely to have any quick effect because of the vast supply of credit.

One of these forces is improving business. Another is large scale loans planned for Europe. It has all along been maintained that eventually we must assist Europe recuperation with the gold we are holding in trust.

That time seems now at hand. The loan to Germany to be offered here soon will be only the beginning of a long series of public and private borrowings from abroad in the months ahead. Meanwhile gold imports are ceasing. The total of incoming gold in August of $15,752,000 was the smallest since April, 1922.

Tide Is Rising

Commercial loans of 747 member banks of the federal reserve system in leading cities increased $100,000,000 last week. This did not dent the credit reservoir but it did reflect the gradually rising tide of business.

How this tide is rising is made forcibly visible by charts in this issue of the Business Trend. Nearly all significant curves are pointing upward IRON TRADE REVIEW'S Business Trend gained 4 per cent in August. The testimony of industrial consumption of coal is for an even greater increase.

Statistical evidence of increased employment has come from the government's survey of 9000 plants. Payrolls were 3.7 per cent larger than in July. The year's mild recession of wages probably has been checked, except in the textile industry, where cuts are appearing.

The Barometer of Business

Weekly Comparison

	Last week	Week before	One mo. ago	One year ago	1913
Business Failures ..	279	324	319	296	...
Cash ratio Fed. Res. System %	78.5	80.3	82.5	78.3	...
Loan Rate, 4-6 mos. N. Y. %	3-3¼	3-3¼	3-3¼	5¼	5¼
Aver. 25 industrial shares	$118.25	$115.56	$118.95	$57.14	$58.19
Aver. price 25 railroad shares	$70.56	$69.82	$70.30	$76.02	$82.97
Av. price 40 bonds	$80.95	$80.53	$80.59	$76.02	$93.00
Car loadings week ended Sept. 6..	920,979	1,020,339	942,128	928,858	*883,415
Bank Debits 243 cities (000 omitted)	$10,293,925	$9,271,749	$9,144,705	$9,712,990	.....

*1920

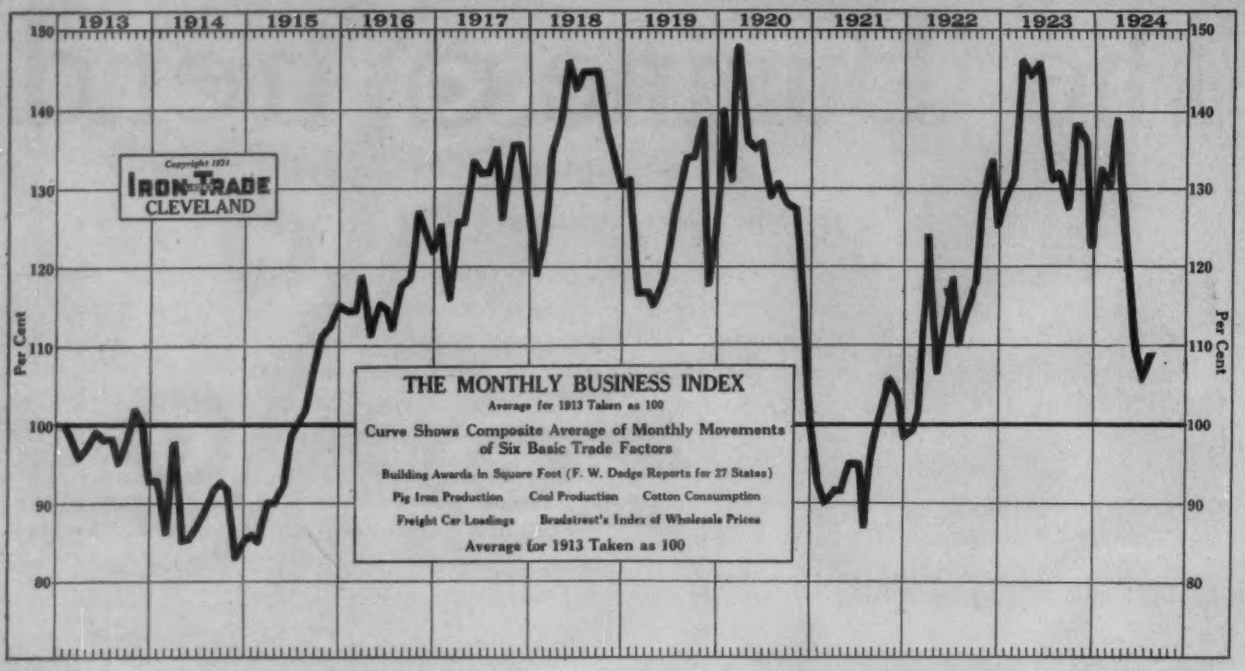
Foreign Exchange (Demand)

	Normal	Last week close	One week before	One month ago	One year ago
Sterling	$4.86	$4.46	$4.46	$4.47	$4.55
Franc	19.3c	5.31c	5.35c	5.32c	5.97c
Lira	19.3c	4.38c	4.38c	4.36c	4.51c

Monthly Comparison

		One Month before	One Year ago	1913 Mo. average
Dodge Building awards in 27 states (sq. ft.)	Aug. 41,852,000	41,178,000	40,337,800	31,250,000
Business failures: Number	1,520	1,615	1,319	1,336
Liabilities ..	$55,153,981	$36,813,238	$34,334,722	$22,732,000
Exports	$331,000,000	$278,000,000	$310,966,000	$233,195,000
Excess of gold imports	$15,752,524	$18,507,000	$30,655,136	†$630,716
Bureau of labor price index..	149.7	147	150.1	100
Bradstreet's price index	138.6	136.5	139.8	100
Economist's British price index	170.2	171.4	154	100
Nat'l Industrial Con. board living cost index	*161.7	161.7	161.9	‡100
New incorporations	$398,950,000	$572,195,750	$335,462,000	$49,301,000
Railroad net earnings	*$74,027,000	$65,528,000	$84,866,400	$59,301,000

†Excess of gold exports. ‡July, 1914. *July.

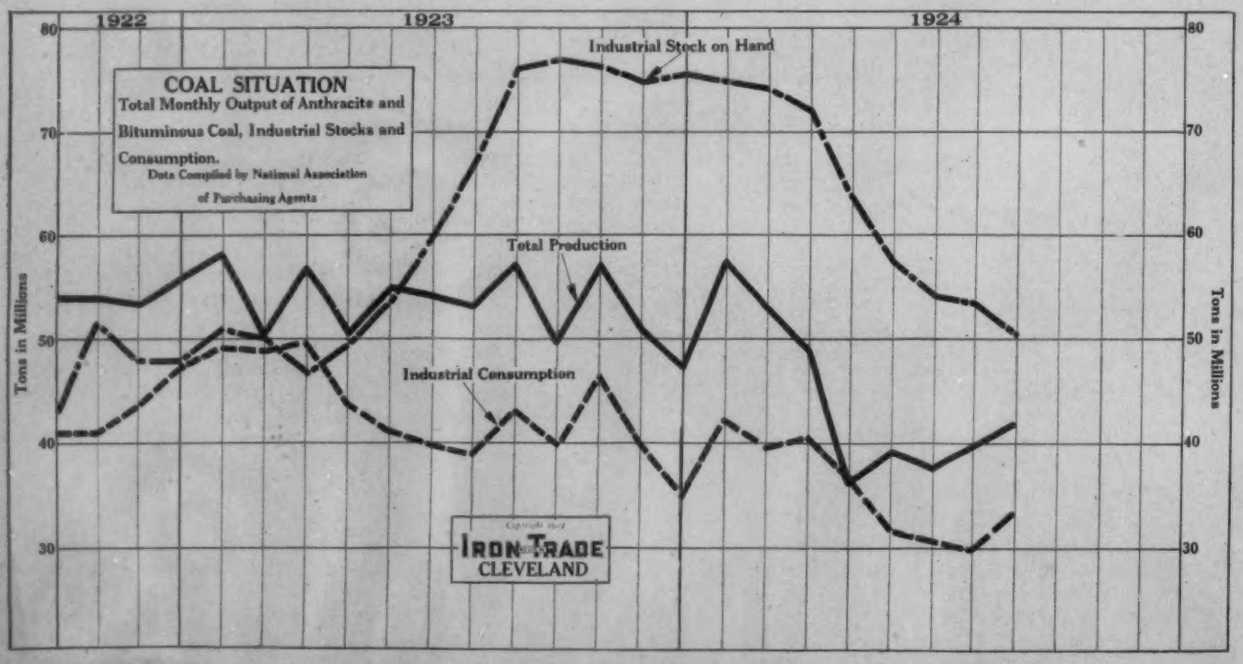


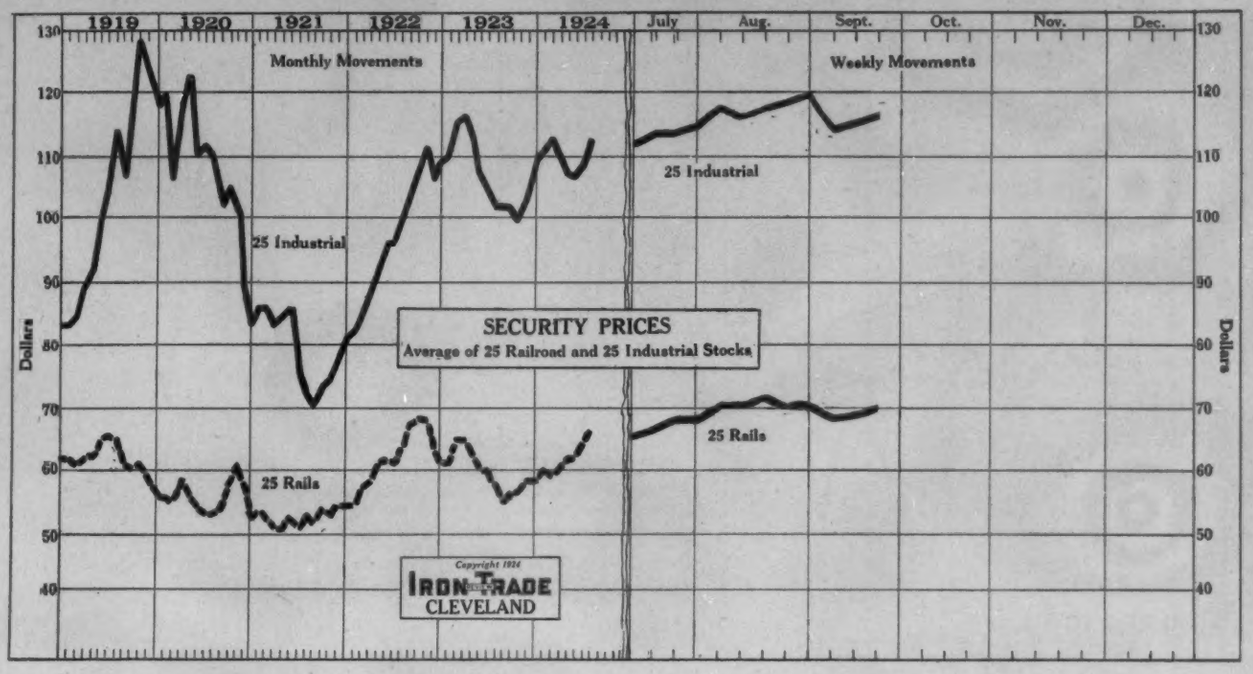
Business Index

THE upward turn of business in August is faithfully portrayed by IRON TRADE REVIEW's Monthly Business Index. The low point of the year for the index was reached in July when it stood at 105.6. Improvement was forecasted by the exceedingly small decline in July. Last month the trend was changed and the number climbed to 109.6, a gain of 4 per cent. In July three of the factors comprising the index advanced and three declined. In August all of them made slight advances, reflecting the broad revival.

Coal Situation

IN THIS issue the Business Trend begins the publication of a chart picturing the coal situation, based upon monthly surveys of the National Association of Purchasing Agents. Data of consumption and stocks are collected from commercial consumers from all parts of the United States and Canada. Production figures are from the United States geological survey. Both production and consumption are increasing. Stocks continue to decline and they are now low by all normal standards. Coal consumed in August gained 11 per cent.



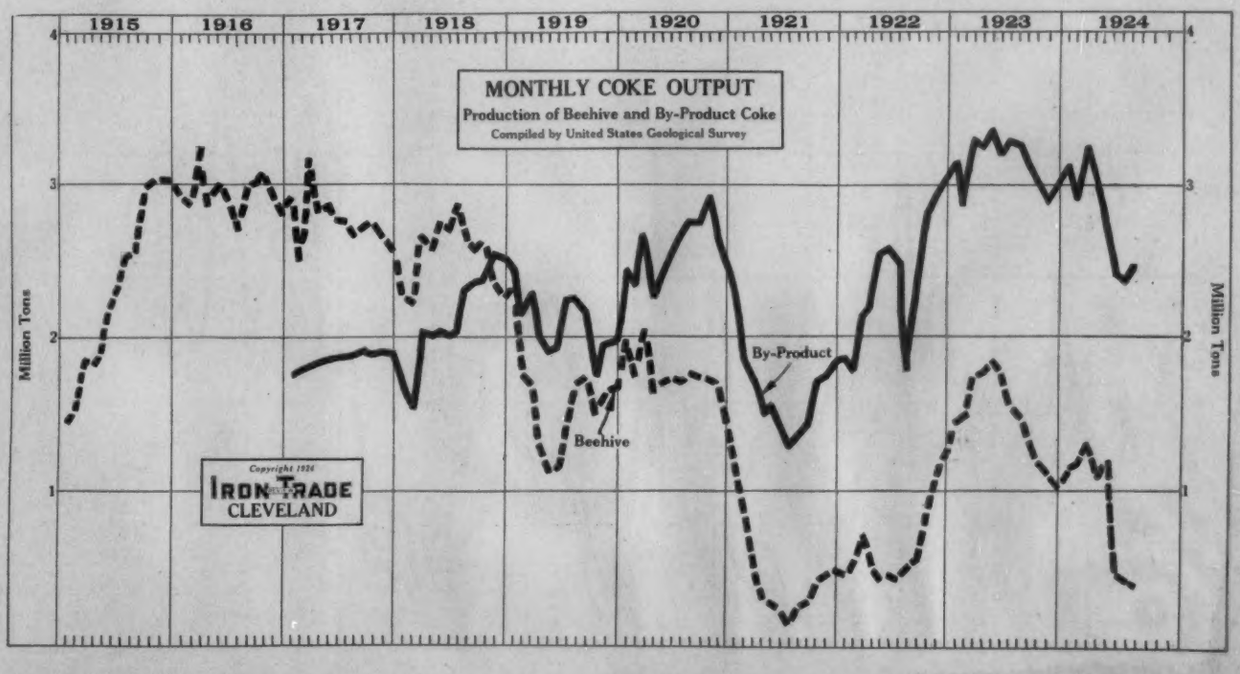


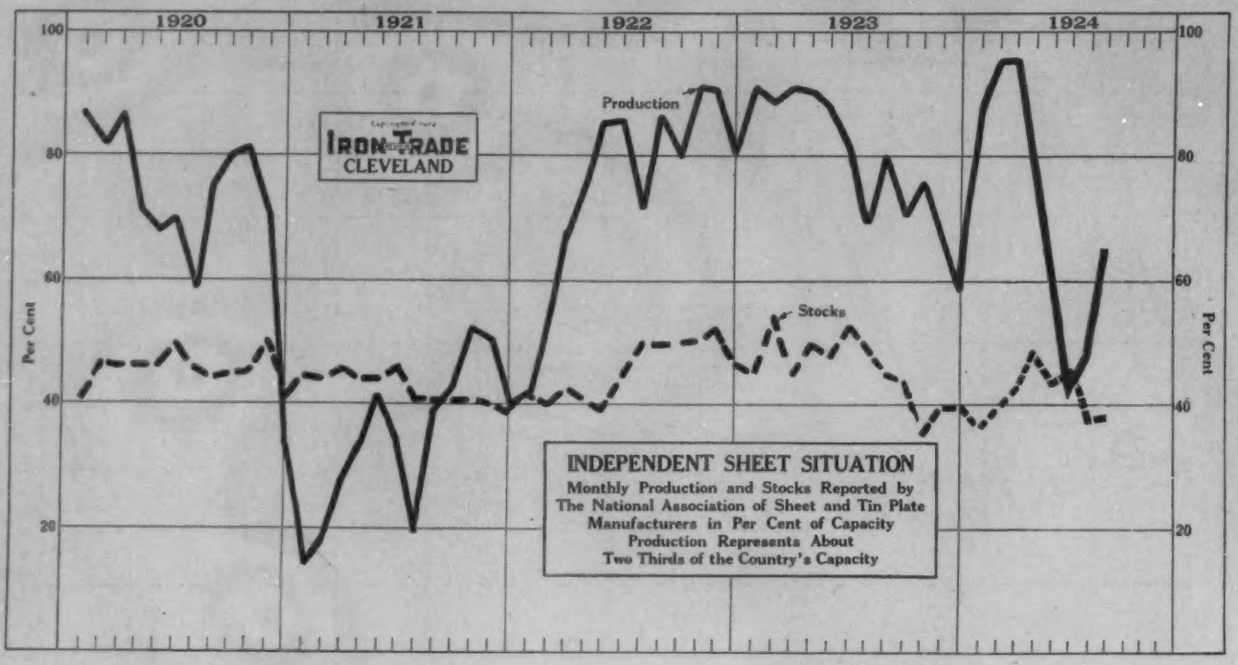
Security Prices

THE rather extended dullness of the securities market has been interrupted recently by spurts of activity. The undertone of values has continued firm because the two great supporting pillars—phenomenally easy money and evidence of industrial recovery—remain unimpaired. The average for 25 industrial shares at the close of last week was 118 against 122 at the high point in August and 104 at the low in April. The average of 25 rail shares was 70.18 against 73 at the high point in August and 59 at the year's low.

Coke Production

THE impulse of improvement noted in the steel industry and reflected in higher outputs of steel company blast furnaces, is also shown in the increase for the production of by-product coke during August. After four months of steady decline, by-product coke output of 2,425,000 tons was up 2.4 per cent. This total represented 64 per cent of capacity. Beehive coke did not gain in August. The output of 434,000 tons was a decrease of 7 per cent. Recently, however, more beehive ovens have been lighted and production is rising.





Independent Sheets

MARKED improvement continues in the sheet industry. Independent mills representing 72.7 per cent of the country's total hot mill capacity of 401,700 tons showed increases in shipments, sales and output in August. Production of 65 per cent of capacity compared with 48.7 per cent in July. Sales of 71.2 per cent compared with 46 per cent in July; while shipments of 61 per cent compared with 51 per cent. Unfilled tonnage amounted to 81 per cent against 69 per cent one month before. Stocks made little change.

Structural Awards

ESTIMATED structural shape business in August reported by companies with a monthly capacity of 234,170 tons amounted to 153,400 tons. This was 26,000 tons below the estimated July total of 179,400 tons. The per cent of capacity was 59 per cent against 69 per cent one month before. The August bookings were identical with the total for last May. With that exception they were the smallest for any month since November, 1923. Recent reports indicate an increase in the volume of awards.

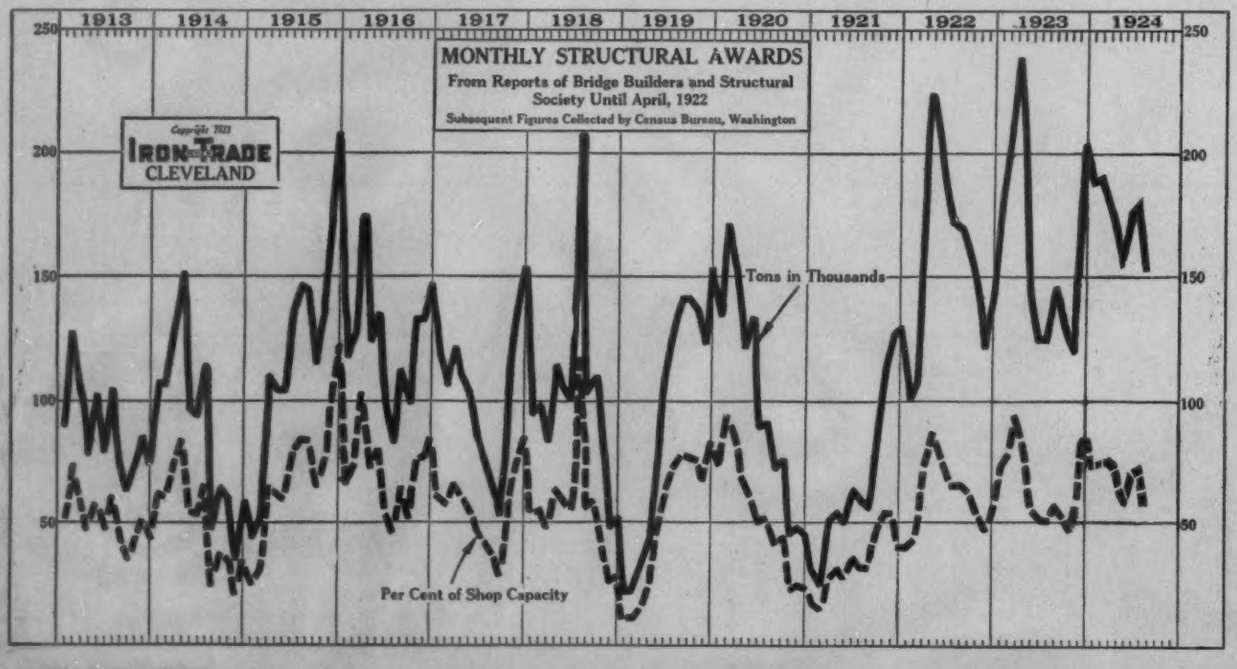


Fig. 1—Yankee Stadium, New York, home of American League New York baseball team. Constructed of reinforced concrete

Use of Steel Reinforcing Grows

First Use of Reinforced Concrete Recorded in 1855—Growth Since Introduction Into America in 1875 Has Been Tremendous, Approximately 680,000 Tons Being Used in 1923—Possibilities of Foreign Usage Just Being Realized

BY J. F. CURLEY

FIRST authentic record of the use of reinforced concrete was the building of a small row boat by M. Lambot, a Frenchman. This boat was shown at the World's fair in Paris in 1855. It consisted of cement mortar, 1½ inches thick, reinforced by wire netting. It is understood that this boat was still in use as late as 1907.

F. Joseph Monier, another Frenchman, sometimes called "the father of reinforced concrete," took out a patent on reinforcing concrete in 1865. His particular work was confined almost exclusively to the construction of concrete troughs, pipes and reservoirs, but his business did not reach any great volume. The Germans really first developed this form of construction commercially.

The first reinforced concrete building of which there is any record in America, was constructed at Port Chester, N. Y., about 1875. The first reinforced concrete bridge built in the United States was a small arch bridge constructed in 1889 at Golden Gate park, San Francisco. About 1889, there began a rapid increase in the use of reinforced concrete and many new systems were developed and numerous patents taken out covering various forms of construction, particularly for bridge work. It was not until 1900, however, that the use of reinforced concrete became wide enough to be considered from a commercial standpoint. Since 1905 the strides have been tremendous.

So extensive has been the growth of this industry that in 1923 it consumed a little more than 2 per cent of the entire finished rolled steel output of the country. In that year 680,000 tons of steel were used for reinforcing concrete. The following table taken from the records of the American Iron and Steel institute shows the consumption of reinforcing steel by years from 1911 on. No figures are available showing consumption prior to 1911.

1911	258,741
1912	274,332
1913	319,670
1914	288,471
1915	353,408
1916	458,717
1917	471,184
1918	344,620
1919	419,021
1920	572,445
1921	227,228
1922	575,816
1923	680,000

Due to the great growth of reinforced concrete construction, many companies throughout the country make a specialty of handling reinforcing material for all kinds of work and maintain extensive warehouses and engineering forces to give contractors the service that they require on this type construction.

It may be stated roughly that steel bars and mesh for reinforcing now are being used extensively, and in increasing quantities, in buildings of all kinds, dams, bridges, canals, subways, tunnels, concrete boats, water works, reservoirs, tanks and other work.

The greatest increase during the past few years has been in concrete highway construction. The demand for smooth roads which will bear the increasing stresses of traffic is growing throughout the country, particularly in the thickly populated sections, but also in the agricultural districts. Reinforcing of concrete roads proceeds from two reasons. Plain concrete roads are almost certain to develop cracks soon after they are laid down and this process of cracking continues. The cracks in themselves are not so serious from a structural standpoint. Their principal effect is to present a point of attack for the impacts of traffic, with the result that the slab rapidly breaks down. By reinforcing the concrete, this cracking and breaking is eliminated and the life of the road is greatly lengthened. The second important reason for reinforcing

The author is general sales manager of the Concrete Steel Co., New York.

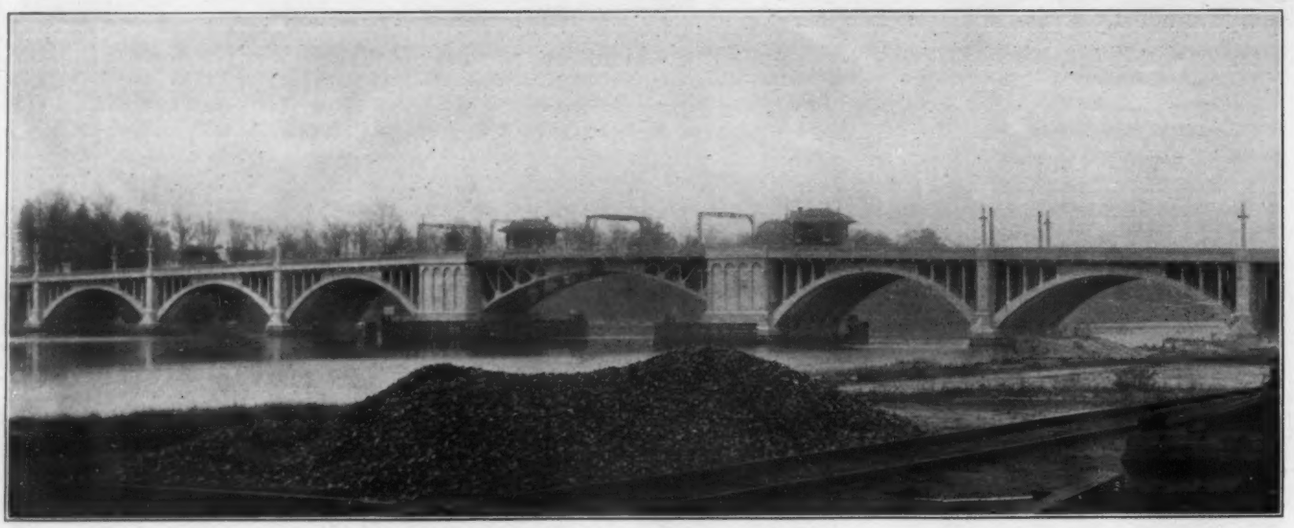


FIG. 2—REINFORCED CONCRETE BRIDGE ACROSS THE HOUSATONIC RIVER, STRATFORD, CONN.

concrete roads is to prevent the upheaving of the roads by frost in cold climates. It is obvious, then, that the greater portion of the steel reinforcing is used in the thickly populated sections and in the states having cold winters.

Of the steel tonnage consumed in the erection of reinforced concrete buildings, the greater portion goes into the eastern states and those where manufacturing has been developed most extensively. This is principally because reinforced concrete construction has proved satisfactory and economical for all manufacturing buildings, with the possible exception of steel mill construction, for which use structural steel is still more desirable than reinforced concrete. There is also, in the thickly populated sections, more demand for fireproof construction. The fire and zoning laws make it practically obligatory in many cases. In the more thinly populated sections there is not the same demand for reinforced concrete construction, although farmers in recent years have been using a larger amount of reinforcing for building sanitary cowsheds, silos and other structures. Of course, the road work alluded to above is increasingly important in the rural sections.

To such an extent has the use of reinforced concrete been recognized in construction work of all kinds that there is not much to be expected in the way of new uses. The amount of steel used in any particular type of construction depends almost entirely on the demand for that type of construction and not on the fact that reinforced concrete might be employed in place of some other material. Due to the extent to which the supply of raw materials, principally cement and steel, have been developed, the cost of those going into reinforced concrete construction make it competitive under practically all conditions with other materials. Reinforced concrete construction has one distinct advantage in these days of high labor costs. One of the factors that has tended to keep the cost comparatively lower than other kinds of construction is that the concrete itself is usually mixed and poured by unskilled labor, although in many sections the labor requirements call for skilled labor to erect the forms and place the reinforcing steel.

In surveying the market for American concrete bars, the foreign consumption must not be overlooked. Most of the export demand for our concrete bars has come from South America, China and Japan. All of these countries are bound to construct a large percentage of their new buildings of reinforced concrete, and the demand in these countries will depend on their buying power.

The possibilities in Japan have received a decided upward impetus by reason of the fact that reinforced concrete structures withstood the recent earthquake and resulting conflagrations better than other types. The Japanese

FIG. 3—NEW PLANT AT PHILADELPHIA OF SEARS-ROEBUCK & CO. WHICH CONTAINS APPROXIMATELY 3000 TONS OF REINFORCING CONCRETE BARS

will undoubtedly consume a large amount of reinforcement tonnage in the future.

The increase in consumption of reinforcement for concrete structures has depended almost entirely on the development of engineering and the knowledge which engineers have acquired as to the behavior of steel in combination with concrete. At one time it was necessary to make extensive fire and loading tests for all large cities before any particular design or system was approved in these cities. In the early stages of the development of the industry there were many theories which now are a matter of knowledge. Consequently, the use of reinforced concrete no longer is a subject of conjecture or prejudice. At the present time, the knowledge obtained has resulted in the establishment of practically uniform requirements as to design, load and other factors by the various cities, so that reinforced concrete construction has become almost as well standardized as that of structural steel.

A great need that exists in the concrete bar industry is the national standardization of the grade of steel. At the present time there are practically three standard grades of reinforcing material used throughout the country, the structural, intermediate and hard grade specifications. These specifications lack uniformity in various parts of the country. Some engineers and cities specify one grade of steel and one set of requirements for design, while a neighboring city specifies another system. It is highly desirable to bring about a standardized set of specifications to prevail throughout the country.

National standardization also should apply to the sizes of bars to be specified. During the war period, as an economy measure, it was agreed among the various bar distributors, with the co-operation of the war industries board, that many sizes of bars could be eliminated. The total number of standard bars was cut down from 18 to 10. It was found that these 10 standard sizes served practically all purposes, thus enabling manufacturers and distributors to maintain small stocks and be in a position to economize in the operation of their business. Since the war period these 10 standard sizes have not been adhered to strictly.

A movement recently has been organized among concrete bar distributors to effect such standardization, both of the grade of steel, and of the sizes of bars.

Lime Use Increasing

Lime sold in the United States in 1923, according to the geological survey, totaled 4,069,830 short tons, valued at $39,934,707, an increase of 12 per cent in quantity and 20 per cent in value over 1922. Lime used in metallurgy increased from 200,799 tons in 1922 to 373,020 tons in 1923, and refractory lime, dead burned dolomite, from 348,838 tons to 357,642 tons.

Issues Progress Report on Gage Tests

The eleventh progress report on the gage steel investigation has just been issued by the Gage Steel committee. This report states the status of service wear tests and lapping wear tests. Under the former heading the bulletin gives a detailed statement of the gages in service; the results of tests of two sets of gages showing the effect of three major variables of heat treatment and composition on wear resistance; and a list of gages in preparation for service tests. The lapping wear test has been continued on one composition of steel treated to show the effect of tempering temperature.

In the tests for wear two main series of eight gages each were used and the results from both series indicated: (1) That carbon tool steel gives better wear resistance than oil hardened chrome bearing steel; (2) that tempering 1 hour at 150 degrees Cent. gives better wear resistance than 1 hour at 300 degrees Cent.; and (3) that chrome bearing steel in the sizes noted quenched in water from 810-820 degrees Cent. and tempered to 150 degrees for 1 hour has approximately the same wear resistance as when quenched in oil from a temperature 30 degrees higher and tempered the same.

In the lapping wear tests the mean values show a small but definite loss in wear resistance with increasing tempering temperature of both water and oil quenched specimens. The wear resistance of the oil quenched specimens is slightly less than the water quenched specimens tempered the same. The first observation applies also to the service wear test results. The difference implied by the second observation is so small that the laboratory and service tests are in practical agreement so far as they are parallel. Tempering for 1 day and for 1 week at 100 degrees Cent. does not seriously reduce the wear resistance, that is, it does not lower it more than does tempering for 1 hour at 150 degrees Cent. Thus if a treatment is found desirable in order to control time changes, its effect on wear resistance will not be objectionable, provided that the lapping test is a fair measure of service wear.

FIG. 4—A TYPICAL SCENE IN A CONCRETE BAR PLANT SHOWING HEAVY STOCK REPRESENTING LARGE INVESTMENTS TIED UP IN THESE WAREHOUSES WHICH ARE MAINTAINED FOR FURNISHING SPOT SERVICE IN ALL KINDS OF REINFORCING STEEL

Standard Screw Threads Receive Adoption

The American Engineering Standards committee has just approved as American standard a 32-page document, constituting the finished work of the sectional committee on standardization and unification of screw threads, in the field of threads for bolts, machine screws, nuts, and commercially tapped holes. The committte, which has done this work under the joint sponsorship of the American Society of Mechanical Engineers and the Society of Automotive Engineers, was organized in 1920, and includes in its membership many experts on this subject.

The report has been prepared in collaboration and agreement with the National Screw Thread commission, which includes several members of the sectional committee, and in which the Society of Automotive Engineers and

American Society of Mechanical Engineers are the two civilian participating organizations. The present report is based upon the progress report of the commission.

By the adoption of the report of this committee, screw threads are narrowed down to and standardized upon two series; namely, an "American Coarse Series" for general work, and an "American Fine Series" for work in which a finer thread is desirable, as with the special alloy steels used extensively in the manufacture of automobiles. The same form of thread is used in both.

The adoption of standard screw threads is perhaps the most important single advance in American industrial standardization, since screw threads are fundamental to design and manufacture in every field, and enter into almost every kind of manufactured product and machine. In shipbuilding, and the manufacture and repair of automobiles and farm implements, in bridge and building construction, and in fact in every one of the great industries on which our mechanical civilization is built up, the standardization of screw threads is a factor of paramount importance, and the confusion which would exist in the complex mechanical equipment of today, if the diversity of form and numbers of thread which prevailed 50 years ago were to return, would be almost inconceivable. Years ago the threading of a bolt or screw was left to the judgment of the individual mechanic who produced it. Interchangeability was neither expected nor possible. In the present specialization of industry, however, manufacture of such material upon a standard basis is a necessary development involving economies and conveniences of great importance in every direction.

The coarse thread series is the present "U. S. Standard," or "Sellers Standard," supplemented by the "A. S. M. E. Standard" below ¼ inch, and the fine thread series is the "S. A. E. Standard" supplemented by the "A. S. M. E. Fine-Thread." Different classes of fit, "loose," "free," "medium" and "close" are established with corresponding numerical tolerances to provide for unavoidable inaccuracies of workmanship under practical conditions A standard screw thread nomenclature and also a system of identification symbols for use in correspondence, drawings, and shop practice, are established.

Referring to international standardization, the foreword to the report states: ". . . the sectional committee hopes that further steps may be taken by mutual concessions which result in bringing together the Whitworth (British) and the American systems of threads so as to secure interchangeability.

Simplification Aids Foundry Profits

BY R. M. HUDSON

WHETHER the foundryman looks at the problem from the standpoint of a manufacturer or as a member of an industry which spends millions of dollars annually in supplies, there is an avenue for additional profits through simplified practice. Profits do not always come from volume business at good prices, nor do they always come from low costs. As a rule the most successful businesses are those building volume on quality products, dependable deliveries and fair prices, using good materials, modern machinery, up-to-date methods, and paying good wages. They watch expenses; they know their costs; they allow no waste; for they realize that the way to increase profits under present conditions is to eliminate waste.

Waste arising from our annual fire loss arouses deepest concern throughout the country, yet that $500,000,000 loss is less than 5 per cent of the annual waste in industry. Surveys made by 18 leading industrial engineers of six major industries at the request of Mr. Hoover when he was head of the Federated American Engineering societies showed that there was an average of 50 per cent waste in the six. Estimates place the loss which could be eliminated through standardization and simplification in industry at 20 billion dollars per year. Complete and practical standardization is a slow process, often taking years before the development is complete. But simplification is immediately applicable in many lines. Simplification considers the existing variety in sizes, dimensons and material difference in everyday commodities. When simplification is asked by an industry through our division, the first step is to get the facts as to the variety of production, and the demand for the various items; for it has been pretty generally shown that in the average case 90 per cent of the demand comes for 10 per cent of the variety of products made. The other 10 per cent of demand causes the extra expense and trouble. Then, with manufacturer, distributor, and consumer brought together, we show them what we have found, and ask them to act. In the first 10 industries, the odd and superfluous sizes eliminated represented an average of 86 per cent; yet those industries are doing more business at lower costs than ever today; and their workmen are freed from worry of seasonal operation.

As manufacturers, foundrymen know only too well the grief that comes with the frequent pattern changes which your customers inflict upon you. Perhaps you feel that to suggest simplification to them is more their problem than yours, but when you are bidding for work, the question of whether you get the job may be decided by your ability to show the prospective customer how, by simplification, you can help him get out a better product at lower cost. Oftentimes, simplification of parts would permit you to make them up for stock in quiet periods against the customer's future needs. Standardization of patterns now is being considered by a committee of foundrymen, pattern manufacturers, and other affected organizations, the chairman of the committee being E. S. Carman of the Osborn Mfg. Co., Cleveland.

Looking at simplification from your angle as purchasers of millions of dollars worth of supplies, machinery and equipment each year, a concerted effort on your part to simplify your purchases unquestionably will save money for you. Many of the thousand opportunities for simplification which were reported to Secretary Hoover through the American Society of Mechanical Engineers and the American Engineering Standards committee cover items that originate in some foundry or are used in foundries. Think of how many varieties there are of each item of supply and equipment, and what it would mean to you if the purchasers of these items of supply and equipment would co-operate with you in their further simplifications.

Simplification is a profit-making policy. It reduces stocks, production costs, selling expenses, investment, seasonal employment, and misunderstandings. It increases turnover, promptness of delivery, quality of product, aids in promoting foreign commerce, and enlarges profits.

From a paper presented at Cleveland convention of the Ohio State Foundrymen's association, Sept. 18-19. The author is chief of the division of simplified practice, department of commerce, Washington.

Conserving Our Industrial Fuels

Great Economies Available to Users of Furnaces Through Efficient Installation and Operation—Some Methods Pointed Out Whereby Considerable Saving May Be Accomplished

BY G. R. BRANDON

UNWITTINGLY at the outset, and later by reason of inertia, American industry has been wasting its material. Forests have been cut without thought of renewal; the fertility of the land has not been replenished; tailings contain a percentage of mineral that would well pay for reworking. Fuels especially have been wasted. Two or three times as much has been used as should be necessary in power plants, and up to six or more times what really efficient furnaces would require in industrial operations. The economic loss from these practices has aroused general interest in what has been called the "conservation of natural resources."

Much has been done to increase the efficiency of power plants, the principal user of fuel. Any power unit to be installed in a representative modern shop would be operated at high pressure, would be supplied with a high-grade boiler and setting, have stokers for burning screenings, or be provided with other means for utilizing the cheaper grades of fuel, and an economizer to extract heat left in the off gases. A steam generator of high efficiency and of a type best suited to the conditions, direct connected to an electric generator would be used, with current transmitted to individual motors operating machines. Such an installation is vastly different from the early type of power plant, having its boiler exposed, hand fired, with a simple engine, following nearly full stroke, and the greater proportion of power produced used in driving line shafts.

Utilities Reduce Wastage

Public utility companies have made a steady improvement in their operations and are developing power with 40 per cent less expenditure of energy than 20 years ago, efficiency of operation increasing from 15 to 25 per cent. Superpower simply means that generating stations located within a certain territory are connected by common transmission lines, and all furnish current for general consumption. Installations of this character naturally would have individual plants of highest efficiency. Inconvenience to customers, and loss of sales through possible disability of any particular station, are avoided.

Superpower surveys of large districts have been made; the United States geological survey on "A Superpower System for the Region Between Boston and Washington" particularly may be cited. The estimated saving in industrial power plants and in electric public utility operations using steam, on the basis of conditions in the year 1919, would be 25,000,000 tons of coal per year. Allowing for natural increase in demand, by 1930 the annual saving would amount to 40,000,000 tons.

When fuel oil is used for power production it is obvious that it should be used in diesel type oil engines, directly, rather than burned for making steam. At least one-half the oil is saved when used directly in a suitable engine. Demand for installations of this character is steadily increasing, especially in the oil fields and elsewhere in small plants.

The steel mills, through their necessity of meeting the competition of the most enterprising, have generally adopted methods of heat recovery in melting, reheating, annealing, etc. Regeneration, of course, is necessary in the open-hearth melting furnace to obtain the required temperatures; the incidental economy, nevertheless, being well considered. Regenerative, recuperative and continuous furnaces are in common use in steel mill practice, and when designed properly and operated should give good results as compared to direct fired furnaces.

Blast furnace operation in the smelting of iron ores has long been the object of special study, and with hot blast and surplus gas used for fuel or power, a marked saving over previous performance is noted. The thermal efficiency of operation of the foundry cupola is relatively high, and economies have been obtained from heating the blast, which can be utilized under certain favorable conditions.

The application of waste heat boilers is a means of recovering some of the heat in off gases from inefficient furnaces. Generally there is not the adjustment between the supply of steam, so generated, and the demand which would make this system most effective. It can easily be shown that an efficient, separate installation of boilers, independently fired, in connection with a proper heat recovery system for the furnaces themselves, will give better thermal and commercial results.

It is in the field of the industrial furnace that the least progress in fuel conservation has been accomplished. Too frequently any fuel and whatever method of firing, or construction of furnace that would give production was considered satisfactory. The typical user of furnaces paid little attention to avoidable losses in fuel, either through ignorance or neglect.

The drop forging industry has been conspicuously neglectful in this regard. Improvements in practice are exceedingly rare. Air furnace and annealing oven operation in the average malleable plant is capable of decided improvement in results through proper designing. There may be considerable advantage in the use of powdered coal over the usual practice of hand firing, but heat recovery is lacking. Continuous annealing has developed economies under favorable conditions.

The practice of the ceramic industry is another example of fuel waste, although it must be said that the tunnel kiln and progressive firing in continuous kilns have accomplished much in fuel conservation. Other heating operations, like annealing, heat-treating, enameling, etc., requiring lower temperatures than melting, forging and firing ceramic wares, are relatively more efficient, and with less to be gained from heat recovery. The most fuel is used and the greatest possibility of heat recovery is in the high temperature furnaces. This is the field which should receive first aid.

Where Losses Occur

An analysis of furnace performance will disclose where the losses occur and suggest the means for possible improvement in operating efficiency. Take the case of furnaces for heating steel for drop forgings, where temperature of hearth reaches 2400 degrees Fahr. and the stock is heated to 2300 degrees Fahr. The specific heat of steel at this temperature is 0.167, therefore the heat required to raise the temperature from 70 to 2300 degrees Fahr. will be (0.167 × (2300-70) × 1) 3724 B.t.u. per

The author is industrial furnace engineer, 28 East Jackson boulevard, Chicago.

pound, or, 37240 B.t.u. for 100 pounds of steel heated.

It is well known that the overall thermal efficiency of heating furnaces for drop forgings, including the fuel used for heating furnaces from cold and that lost in firing furnaces only partially loaded, does not exceed 5 per cent. However, assume 10 per cent thermal efficiency, as approximating ideal conditions in the ordinary, existing plant; then 37240/0.10, 372400 B.t.u. would be required in fuel to heat 100 pounds of steel. If the fuel oil were being used, $\frac{372400}{140000}$ = 2.66 gallons would be the requirement, equivalent to 53.2 gallons per ton of stock heated.

How is this loss of 90 per cent of the total heat of the fuel accounted for? The most important loss occurs in the off gases; their temperature must be that of the heating chamber and the heat contained in them is more than would be absorbed in the same weight of steel, because of the greater specific heat of the gases of combustion. Furthermore, the actual weight of these gases will exceed the weight of stock heated by them.

For complete combustion of one gallon of fuel oil the minimum requirement of oxygen will be contained in about 1300 cubic feet of air but in practical operation we may assume that about 20 per cent excess of air will be used, or 1600 cubic feet. The weight of this amount of air is approximately 123 pounds, adding the weight of 1 gallon of oil, 7.5 pounds, the total weight of the products of combustion will be 130.5 pounds, nearly 3½ times the weight of stock heated to forging temperature in the ordinary type of furnace with 1 gallon of oil.

Heat contained in the off gases from such a furnace, assuming that the temperature of discharge is 2400 degrees Fahr. is about 70 per cent of the total heat contained in the oil. In furnaces operating at lower temperatures, the heat in off gases is less but the same principle applies.

The remaining heat of the fuel in the case under consideration, namely, 20 per cent is accounted for by radiation from furnace walls, the losses due to combustion of fuel, outside the furnace, the absorption of heat by furnace brickwork and structure, and by the moisture contained in the combustion air and in the fuel itself.

Under certain conditions as in the annealing of malleable castings and in other cases where brickwork is massive, the amount of heat to satisfy brick absorption is a large item, and study of design to minimize this loss should not be neglected. The big loss in the operation of industrial furnaces occurs in the discharge of the products of combustion into the atmosphere without attempt at heat recovery.

Various means have been used for recapturing the heat in the off gases. The continuous furnace provides one method. The hearth in such a furnace is extended and divided into soaking and preheating zones. A certain proportion of heat from the off gases is absorbed by the charge progressing through the furnace, the temperature of discharged gases may be as low as 800 to 900 degrees Fahr. However, the losses from radiation must be greater than in the usual type of furnace and the range of work for which this design applies is necessarily limited. Another is recuperation, in which the temperature of combustion air is raised by transfer of heat from off gases through refractory or metal walls of the air passages. There are several limitations to this method of heat recovery. If metal recuperators are employed the temperature to which they may be continuously subjected is appreciably less, even for the most effective heat resisting alloys, than the off gas temperatures of forging furnaces, indicating the inefficiency of this method of heat recovery. With lower operating temperatures, such as used in annealing, heat-treating and enameling, recuperative devices are relatively much more efficient. The use of refractory tiles for recuperators to obtain the full benefit of the heat in discharged gases would involve too extensive a structure to be practicable. The actual savings from recuperation are less than might be obtained largely because of questions of design and expense.

Regeneration still is another method of heat recovery. With this system combustion air is preheated by passing through regenerative or checker chambers, formed of refractory bricks, which previously have been heated up by the waste gases traveling through them. Firing direction is periodically reversed, and the two sets of regenerators are alternately used for passage of off gases and combustion air.

It is entirely practicable in regenerative furnaces to increase the temperature of all the air required for combustion to within 1 to 200 degrees Fahr. of the hearth temperature. In the example already given: If combustion air be raised from 70 to 2200 degress Fahr. the ratio of heat imparted to this air by means of off gases to the total heat in the oil will be

$$\frac{1600 \times 2130 \times 0.02088 \times 100}{140000}$$

50.7 per cent. In other words, for every gallon of oil consumed 50 per cent of the total heat value may be returned to the furnace and would increase the thermal operating efficiency by that amount.

This possible heat recovery must be discounted in actual practice for the periods of heating up and for operation under partial loading but thermal efficiencies of 40 per cent actually have been obtained in commercial operations. This means in the case cited a saving of three-fourths of the oil which would be required in the ordinary direct fired forge furnaces.

The saving with recuperative furnaces under most favorable circumstances, due to practical limitations of design, would amount to about only one-half of the foregoing and if the heated combustion air is passed through the burners and used for atomizing, the temperature must not be over about 600 degrees Fahr. on account of the danger of carbonizing the oil. The air at this temperature contains $\frac{1600 \times 600 \times 0.02 \times 100}{140000}$ 13.7 per cent of the total heat of the oil fired, or only about one-fourth of the heat recovery of the regenerative furnace.

Much depends on the design of the furnace in all its features. The time should soon be past when the main consideration in the design of a furnace would be that it should produce the required amount of heat. It is apparent to anyone that flame around doors or through discharge ports or other openings has no effect in heating the charge. Best results may be obtained when fuel is consumed completely within the furnace.

The method of atomizing in the case of oil fuel also is important. Should air be used, it must be cold and heat recovery is depreciated to the extent that the air for atomizing displaces the combustion air that passes through the regenerator or recuperator. If steam should be available it is to be preferred as an atomizing agent for the reason that it is inert as regards its influence on combustion. In properly designed burners the requirement of steam is small and the amount of heat absorbed by it may be negligible.

An excess of air is required, practically, for combustion of all except gaseous fuels. The writer in observing the operation of a certain furnace was informed by the operator that there was perfect combustion; but he was thinking only of the absence of smoke. The excess of air furnished would readily produce much lower thermal efficiency than might occur from smoky operation.

There is no exact control of air supplied for combustion in the ordinary industrial furnace. Openings around

burners permit the entrance of air by induction, often with no attempt to regulate the quantity. The condition is improved when dampers are provided, but adjustment required for change in fuel supply is neglected. Automatic action, at best, can be only approximate. It would be better practice to use a type of burner that could be set without air opening around it and supply air for combustion by blower under low pressure. This would give better opportunity for control and furnace then may be operated under nearly balanced conditions and ingress of atmospheric air through openings of the furnace prevented. The quantity of combustion air often reaches 50 per cent in excess of the theoretical requirements, and this means approximately 20 per cent more fuel used.

Heating the fuel can be of slight advantage only. If oil is used temperature must be kept under flash point, less than 200 degrees raise, and as the combustion air is 15 times the weight of oil consumed the benefit is negligible. However, conditions for atomizing are improved by heating the oil, and in cold weather it is essential to do so to permit pumping. In open-hearth, regenerative furnaces, operated with producer gas, the gas is usually passed through the checkers, although in recent years the futility of this practice has been pointed out. The relatively high admission temperature of hot gas precludes any real beneficial effect of regeneration. In smaller regenerative industrial furnaces any possible benefit from regeneration of gas fuel, even cold gas, is more than offset by additional complication of design involving increased cost of construction, by the added losses from radiation and because of cracking of gas in regenerative chambers with attendant loss of heat and deposit of solid matter in the checkers.

Selection of Fuel Important

The selection of fuel to be used in industrial furnaces is of the utmost importance. Circumstances often seem to control the situation and that fuel is used which is most readily available, but a careful analysis should be made to determine what would be best in final results. It should not be forgotten that economies by individual users not only benefit those users, but all others. This is the moral aspect of conservation.

Fuel oil has the most extensive use of all fuels for industrial furnaces. The relatively limited supply, according to the geologists, makes it necessary to preserve this fuel to the utmost for essential purposes. The navy must have fuel oil as it is "the first line of national defense." The convenience of unloading and storage, the economy of storage space, the ease of transfer to the furnace and of control at the point of consumption, together with the saving of labor in these features, and in the absence of ash. All these advantages, coupled with the prevailing low price, explains its increasing popularity. The price of fuel oil, however, is very sensitive to market conditions and experience has proven that wide fluctuation is to be expected, furthermore, gradual increase in price must be anticipated through the operation of the law of supply and demand.

The high calorific value of fuel oil has made it possible to obtain as high temperatures as necessary in most metallurgical operations in the simple, direct-fired furnace, without heat recovery. If it were not for this fact heat recovery methods must have prevailed and today the world would be richer. There is no longer any excuse for the wasteful use of fuel oil in inefficient furnaces.

Coal is the most abundant and widely distributed of all fuels in this country; it is the cheapest fuel, and the price is comparatively stable. Some industrial furnaces still are direct fired with coal. Malleable melting furnaces and annealing ovens may be mentioned, and this practice is predominant in the ceramic industry. While the direct-firing of coal, including the powdered form, gives highly efficient results in boiler practice, the case is rare indeed where this custom is desirable in firing industrial furnaces. The famous metallurgist, Sir William Siemens, committed himself on this proposition over 40 years ago. He said: Raw coal should not be used for fuel for any purpose whatsoever, and that the first step toward the judicious and economic production of heat is the gas-retort or gas-producer. This truth is more insistent as time goes on.

Conclusive demonstration has been made that gaseous fuel is far superior to any other form. The distribution of heat, the control of temperature and furnace atmosphere, the proportioning of air and gas to the requirements of perfect combustion, the adoption of heat recovery devices all can be most readily accomplished with gas. The supply of natural gas is waning. The practice is followed in some sections to increase the price for greater consumption, quite the reverse of normal marketing.

By-product coke oven gas as well as blast furnace gas is utilized fully, and mainly by the steel plants; the surplus of the former going to the gas companies. City gas has its field, for domestic purposes and other situations where the convenience and dependability of this form of fuel offsets the high cost.

The product of the complete gasification of coal, producer-gas, is the most economical form of gas fuel, taking into account the cost of manufacture, the carrying charges on plant required, and making full allowance for the difference in B.t.u. value. When producer-gas is properly cooled and cleaned it may be conveyed in pipes any distance, like city gas, and it is entirely practicable for a large works to install a gas plant in a convenient location, and supply cheap fuel for all heating operations, wherever situated. This is a development not widely known, but which is sure to gain in favor.

The difficulties attendant on the use of hot, raw producer-gas, including the necessity of refractory linings in all pipes, the condensation of tar and deposit of carbon, which requires periodic burning out, are all avoided.

Clean, cold producer-gas has higher B.t.u. value than hot, raw gas and while the sensible heat incident to its production has been dissipated the other advantages for this form more than compensate for this loss. With clean gas the proportions of gas and air may be fixed for the requirements of perfect combustion and not left to the judgment of a heater, and lack of uniformity in flow as in the case of hot gas; by reason of its composition combustion is smokeless, it is in the form best adapted to heat recovery methods. Overall efficiency, "back to the coal pile," establishes its superiority.

The economics of present day industry is insistent on the adoption of conservation methods. The fuel waste in ordinary industrial furnace operation is being recognized. When it is known that the returns from the investment for proper furnaces and fuel preparation will be more than from some manufacturing operations, action must result.

Testing Bar to Calibrate Testing Machines

A spring balance in which the "spring" consists of a solid metal bar more than an inch in diameter is used by the bureau of standards as an aid in calibrating testing machines. Contrary to the usual custom it is the "spring" that is to be tested, the weights being known to a few hundredths of a pound. This bar is tested under various loads up to 100,000 pounds and its change in length for each load is measured with an extensometer. It can then be put into a testing machine, and by noting the readings of the extensometer the force being applied by the machine can be measured and compared with the machine's own readings, in much the same way as the accuracy of a scale.

Testing machines are used in labora-

tories for determining the strength of building materials and showing the loads they can safely carry. They are designed to crush the specimen or to pull it in two. Before the specimen breaks, however, it undergoes a perceptible change in length, and within certain limits this change bears a definite relation to the load being applied. The balance for testing this calibration bar consists of a lever resting on the top of a short column and having a pan at its long end into which weights up to a total of 35,000 pounds can be put. The calibration bar is attached at the short end and the ratio of the lever arm is such that loads up to 100,000 pounds can be applied to the bar. Bars for calibrating the compressive forces exerted by testing machines can also be tested in this balance.

They are placed between two interlocking yokes and these are attached to the lever and to the base the same as the tensile bars, power being applied in a similar way.

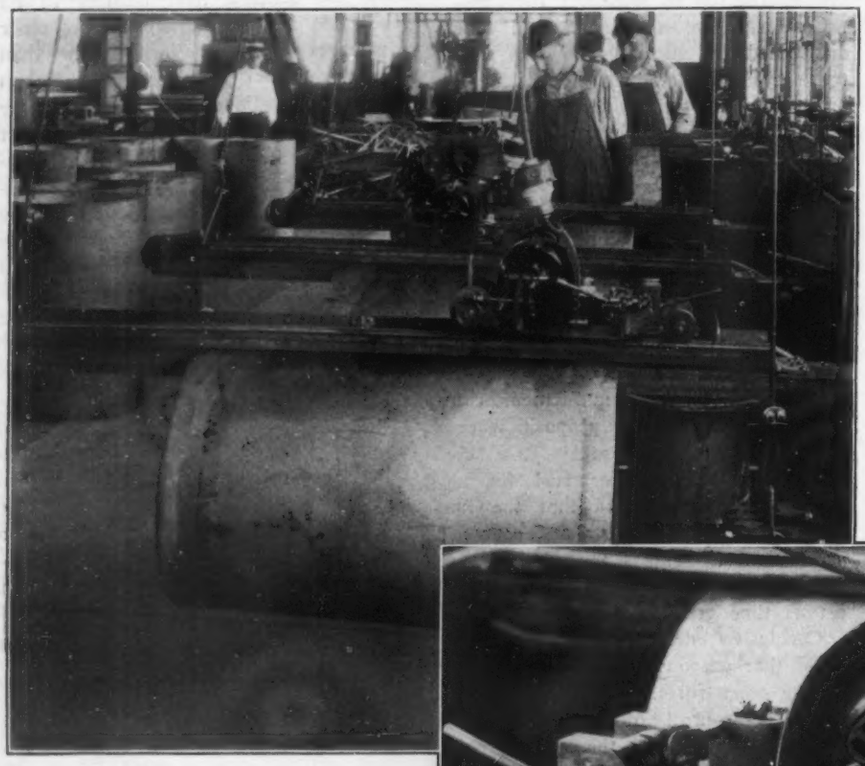
Develops Automatic Welding Machines

INCREASED production of welded steel tanks has led to the development of automatic welding machines for making both straight and circular seams. The Milwaukee Tank Works, Milwaukee, a manufacturer of lubricating oil pump tanks and underground storage tanks up to 56 inches in diameter, has perfected such equipment with the result that its entire production is welded automatically. One operator handles not less than three machines and sometimes more, depending upon the type of work and the skill of the operator.

In these machines, several of which are shown in Figs. 1, 2 and 3, the torch is oscillated automatically across the seam, this procedure, it is claimed, producing an even flow of metal and a neat, uniform, clean, solid weld. The oscillating or cross movement has been found particularly suitable for flowing metal together in cases where seams have spread due to expansion. It is not necessary to use filling-in wire. The machines will weld sheet metal from 16-gage to ½-inch thickness.

Definite speeds can not be given, since the experience and intelligence of the operator in setting his torch and adjusting the machine is a factor. However, it is said that the mechanical welding is more uniform and rapid than that done by hand, and where the gas method is employed, is more economical than hand welding. If automatic arc welding is desired, the machines are equipped with self-feeding carbons.

The longer the seam to be welded, the more machines may be handled by one operator, since loading and unloading is performed less frequently. In the Milwaukee plant, for example, one operator can handle only three straight seam welders on seams 36 inches long, because the work is finished so rapidly, the welding being done at the rate of about 6 inches per minute, Fig. 1 shows a battery of three machines operating on straight seams and Fig. 2 shows a close-up view of one of the machines. Fig. 3 shows a battery of machines welding in the heads of tanks. Machines can be built for almost any diameter of tank but in all cases the head is inserted with the flange out and flush with the edge of the wrapper or shell. Thus end circular seams are butt welded. When desired the circular machines can be equipped with automatic stops which



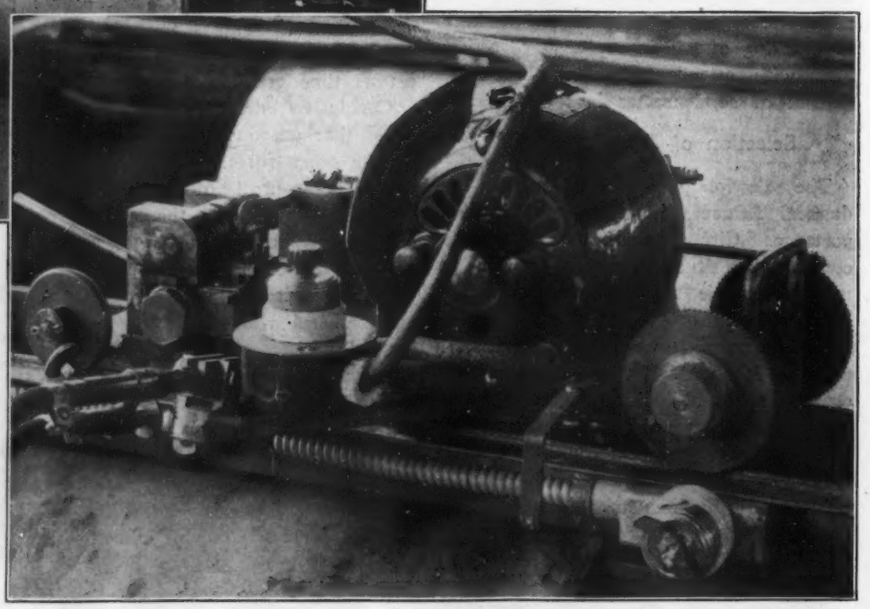


FIG. 1 (UPPER LEFT)—A BATTERY OF AUTOMATIC WELDING MACHINES MAKING STRAIGHT SEAMS. ONE OPERATOR HANDLES THREE MACHINES.
FIG. 2 (ABOVE)—A CLOSE-UP VIEW OF ONE OF THE STRAIGHT SEAM WELDING MACHINES

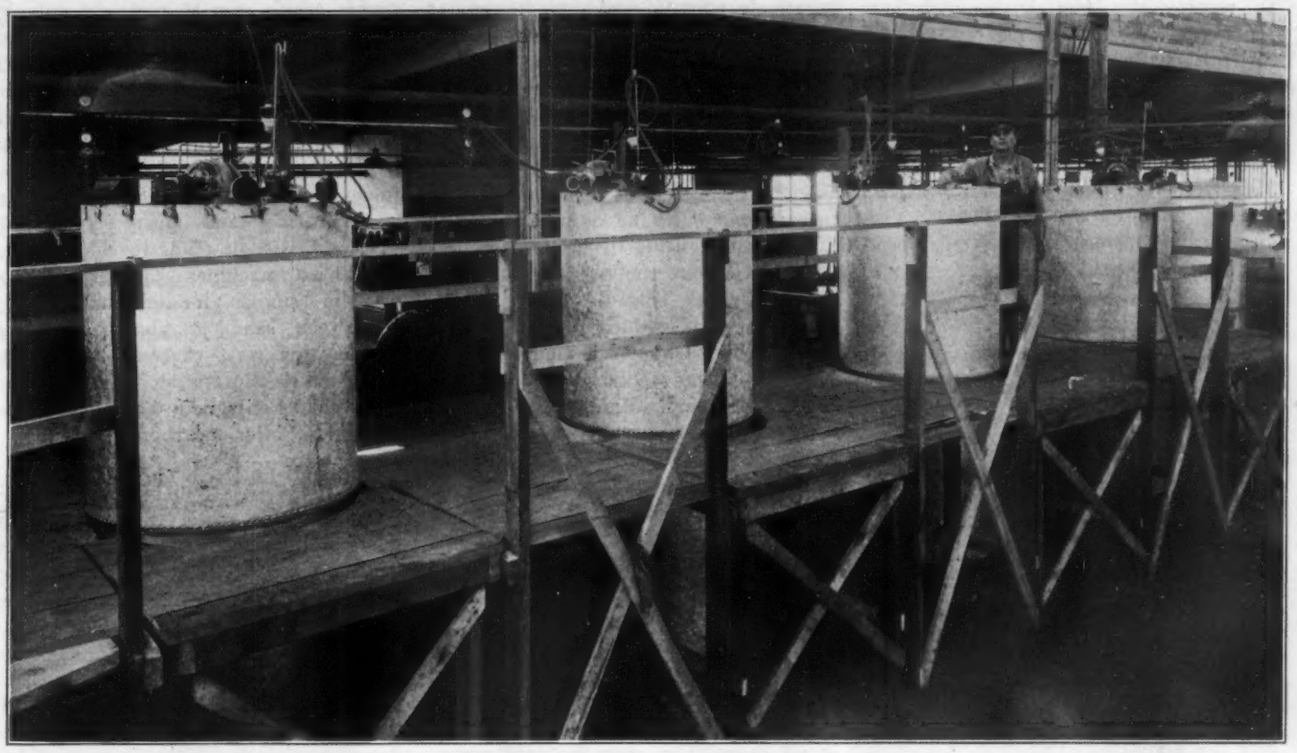


FIG. 3—HEADS OF TANKS ALSO ARE WELDED IN AUTOMATICALLY. THE HEAD IS INSERTED WITH THE FLANGE OUT AND A BUTT WELD IS MADE

may be set at any point of the circle. Such a device stops the machine, throws the torch off the work and flashes on a light which indicates to the operator that the weld has been completed. This feature is of considerable importance where one operator handles a battery.

Means are provided for quick adjustment of the torch both vertically and horizontally so that operation is started quickly. In the case of straight seams, the length of the seam that may be welded is limited only by the length of the clamp that holds the work and which forms the track upon which the machine travels.

Tests Girder Hooks

Technologic Paper No. 260, just issued by bureau of standards, Washington, reports a series of tests conducted on girder hooks. Herbert L. Whittemore, mechanical engineer, and Ambrose H. Stang, associate physicist of the bureau, are the authors. Mild steel hooks having rectangular cross sections often are used for lifting steel girders. Generally, two hooks with their curved ends toward each other are placed on an oval link which in turn is carried by the crane hook. The nominal safe lifting capacity of these hooks usually is computed by adding the tensile and bending stresses. Consequently the purpose of this investigation was to determine the safety of hooks designed in this way. Hooks of 5, 10 and 15 tons capacity were tested.

The stresses obtained from strain gage measurements on girder hooks of rectangular section agreed well with the stresses computed by the ordinary theory of combined tension and bending. In conclusion, the report states that it is impossible to determine by visual inspection whether any part of the hook has been stressed beyond the proportional limit.

Preparing Sands for Blasting Uses

BY W. M. WEIGEL

USE of the sand blast has increased rapidly during the past few years. It was formerly used almost entirely in the foundry to clean and remove inequalities from rough castings. This is still the most important application, but in addition, it is now employed for the removal of paint from old surfaces, carving and engraving on stone and marble, glass cutting, cleaning or renovating the walls of stone and brick buildings that have become discolored, preparing the surfaces, and has even been proposed as a means of channeling or cutting blocks of stone in the quarry.

Some producers, especially those in the central states, or those producing only one or two grades have trade names for the different sizes. In the eastern states however, some attempt at standardization has been made and the grades or different sizes are numbered. Those commonly made are No. 1, No. 2, No. 3 and No. 4, No. 1 being the finest and No. 4 the largest. Some producers make a No. 0, but this is unusual, while some do not make No. 4, as their sand banks do not contain suffiiient material of this size. In general, a No. 2, for example, of one producer is approximately equal in size to a No. 2 of another. Although the same sized screens may be used differences in their method of operation, slope, and whether wet or dry screening is used, as well as the characteristic shape of the sand grains will make variations in the finished products.

The following table shows the limiting size of screen mesh of each grade,

The author is mineral technologist of the department of the interior, bureau of mines, Washington.

as reported by two large producers:

Size No.	Grade A	Grade B
1	—20 + 30 mesh	—20 + 40
2	—10 + 20 mesh	—16 + 20
3	— 8 + 10 mesh	—10 + 16
4	—⅛-inch + inch	Not made

Considerable variations may be noted in the products from the different plants However, for most of them the following range in sizes applies roughly disregarding small percentages of coarse and fine material.

	Through	Retained on
Sand No. 1	.....20 mesh	48 mesh
Sand No. 2	.....10 mesh	28 mesh
Sand No. 3	..... 6 mesh	14 mesh
Sand No. 4	..... 4 mesh	8 mesh

Producers have, in general, their own line of customers who are familiar with the use of the particular grade of sand they are using and normally the producers would, at first not see any advantage in uniformity of practice. It is not the intent or purpose of this paper to recommend standard sizes, but at the same time, it would seem advisable for the producers to get together and discuss this point. The following range of sizes is suggested:

Sand No. 1	Through 20 mesh	on 35 mesh
Sand No. 2	Through 10 mesh	on 28 mesh
Sand No. 3	Through 6 mesh	on 10 mesh
Sand No. 4	Through 4 mesh	on 8 mesh

Screening is not perfect, so that small amounts of coarse and fine material must be permitted. A maximum of not over 2 per cent failing to pass the coarser screen and not over 5 per cent passing the finer screen should make a satisfactory product and not be difficult to produce in a commercial way.

Opinions Are Divided

Considerable difference of opinion exists as to the relative merits of sharp, angular grains and rounded grains. Advocates of sharp grain claim faster cutting and those of the rounded grain claim smoother work and longer life of the sand That is, that it can be used over more often and makes less dust. Many consumers have used only one kind and are therefore not basing their opinions on fact. One consumer reported that they used a certain sand because it had sharp cutting angles and he preferred it to the round. An examination of the sand showed it to be a decidedly rounded grain material.

All quartz grains have about the same hardness, but there is considerable difference in the toughness or ability to resist crushing and shattering. No method of testing this property other than actual use has been developed. The results of plant tests would be interesting, but on account of the many variables entering into the work, would be misleading unless carried out most carefully.

No. 0 is little used. No. 1 is used for light work and where a comparatively smooth finish is desired, as for finishing automobile castings, finishing brass, frosting glass, and removing paint. A large manufacturer of pipe fittings, both brass and iron, uses No. 1 sand exclusively. Number 2 is used for similar work but of heavier character. A manufacturer of enameled bath tubs uses No. 2 sand only. Nos. 1 and 2 are the sizes mostly used. Numbers 3 and 4 are for the heaviest cast iron and steel work only.

The main producing centers are New Jersey, Ohio and Illinois. New Jersey produces both bank or lake and beach sand. Mining or recovery is by steam shovel if the bank is above water level, and will not hold water for a dredging pond. If a pond can be made, the mining usually is done by hydraulic dredging with centrifugal pumps placed on a floating dredge and discharging to the washing and screening plant through long pipe lines. In some localities as on the ocean beach, recovery is by locomotive cranes, equipped with clamshell buckets.

Washing of the sand is carried on in all cases. This may be only screen washing where the sand is particularly clean. Other methods include the use of sand cones, and helical screw washers of the Lewistown type. In rare cases, the final screening or sizing is done wet, in rotary screens or trommels. This practice is unusual, as it involves the separate drying of each size. The usual practice is to dry the entire prouct after washing, or that portion of it taken out by wet screening to be sized to the various grades of blast sand. If only one size is made, it is usually by wet screening.

Both stationary steam dryers and revolving mechanical dryers are employed. The larger sizes, Nos. 3 and 4 usually are taken out by revolving screens of woven wire cloth. The finer sizes are separated on shaking or vibrating screens. At one plant, the products were screened twice to remove excessive over and under size and make a uniform product. At another plant sizes 1, 2 and 3 are separated on stationary sloping screens. A good product is made, considering uniformity but the efficiency is low and plans are under way to displace the stationary screens with vibrating ones.

The Ohio and Illinois sands are obtained generally from more or less coherent sandstone. Those in Ohio usually require crushing. The Illinois deposits are less consolidated and while they require blasting to loosen up the beds, disintegrate and fall to pieces in water sufficiently so that the material can be handled by dredging pumps.

All bank and beach sand contains silt or clay, which adhering to the quartz grains, can be removed only by washing. Also, varying amounts of vegetable matter may be present, which would break up and pass through the screens with the finished sand. A small amount of clay adhering to the quartz gains does not in itself, lower the usefulness of the sand. For proper use, however, the sand must be perfectly dry; otherwise, it tends to choke in the sand blast machines. The presence of clay or similar foreign matter may cause the sand to absorb moisture, and in this way, cause trouble in its use. Also the dust is increased, but this is a small objection as clay dust is much less injurious than silica dust.

Sand Is Used Over Again

In nearly all cases, the sand is used over and over, until the grains are broken too fine to accomplish the desired result. The fan exhausting the air sand and cuttings from the sand blast room discharges to a collector of some form in which the dust is separated from the coarser material. If a coarse size is used originally, the finer sizes resulting from breaking of the grains may be separated by screening and used for suitable purposes. In many instances the dust is considered worthless and is thrown away. At foundries a use often may be found for this material, and the following suggestions have been made.

The United States Silica Co., Chicago, furnishes the following data on possible uses for waste sandblast dust: As a foundry parting it is shaken from a bag exactly as ordinary parting is applied; mixed with dead core or gangway sand it forms excellent cores, especially for thin, difficult work; it can be used as a core wash in place of ordinary silica dust; under certain conditions, it can be used a foundry facing, but the foundryman's judgment must be exercised in applying it to various classes of work; it can be mixed with clay for luting the covers of annealing pots; it has been employed successfully as an interlining between the brick flooring and the metal bottom of annealing and other furnaces. A layer of dry dust 1½ inches thick imparts a cushioning effect to the brick floor which aids in preventing breakage under heavy loads. The sand also insulates the bottom of the furnace which lengthens its life.

The department of the interior suggests that the waste sand also could be used as a mixture for making concrete but as particles of iron and steel would lead to discoloration, it should not be used on work above ground. The sand also has been used for covering newly laid asphalt roads, with excellent results.

Stamping Operation Has Special Treatment

A problem encountered in desigining many new stamping operations concerns the question of whether to draw or form the metal. In the latter case, the metal is compressed into the shape desired. In drawing, however, the metal is pulled or made to flow into the desired form. The ingenuity or lack of ingenuity exercised by the die-maker in analyzing conditions of operations is more often the cause for success or failure of a new die than any other one factor.

The motor support arm shown in Figs.

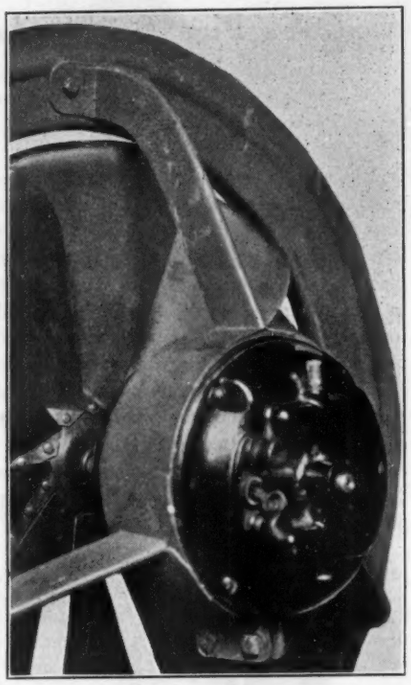


FIG. 1—THREE PRESSED METAL MOTOR SUPPORT ARMS ARE USED ON THIS FAN

1 and 2 and used on an electric fan manufactured by the Buffalo Forge Co., Buffalo, illustrates this point. To stamp this arm, which is U-shaped to obtain rigidity, the supposition is that a forming operation would attain best results; in other words, to form the "U" from the flat piece of steel and then to curve the arm. The difficulty in employing a forming operation here however, is that two directly opposing forces are exerted on the part being curved. The outer circumference of the arm is drawn while the inner circumference is subjected to a forming action. The exerting of these two opposing forces results in a buckling of the sides of the arm, particularly around the inner circumference of the arc. This condition is undesirable; it greatly weakens the structure of the support and mars the appearance.

The method of stamping developed and used in this instance, consists of a drawing operation throughout. The piece of metal, after being blanked, is formed up in the flat; that is, it is pressed to the proper curvature. The pressure plate, holding the ends of the sheet metal, moves downward and stretches the metal over the forming punch. The result at the finish of the stroke is the U-shaped motor support arm as shown in Fig. 2. This arm is exceptionally rigid, practically unbreakable under conditions of service demand and so formed that it offers the minimum resistance to air passage. A pair of ears at each end of the arm provide the method of attachment to the motor and the fan frame. The entire fan unit is made of pressed metal including the blades and frame.

Makes Progress in Pipe Standardizing Work

Rapid and important progress is being made by the sectional committee on pipe flanges and fittings, which is working under the procedure of the American Engineering Standards committee and under the joint sponsorship of the American Society of Mechanical Engineers, Manufacturers Standardization Society of the Valve and Fittings Industry, and Heating and Piping Contractors National association.

The 1924 A. S. M. E. standard for cast iron flanged pipe and fittings for 125 pounds steam pressure now is in revised galley proof form, and undergoing vote of the sectional committee. While the present edition involves a number of changes, it does not differ in its broad outlines from the earlier form. One of the more important changes is the elimination of approximately 50 per cent of the sizes above 10 inches in diameter; the older size series provided an unnecessarily close spacing of diameters.

A rather remarkable piece of work has been done in the preparation of standards for steel flanges and flanged fittings, for 250, 400, 600 and 900-pound steam pressures, with 750 degrees Fahr. superheat. The work of the sectional committee on this is nearly completed, although the work was begun less than a year ago, and involved the laying down of complete new designs, actually in advance of practice. Some of the higher steam pressures have never been employed commercially, consequently it was a case of necessary standardization in advance of the development of practical applications.

Plans now are on foot for the printing in draft form of all proposed standards now on the program of the sectional committee, including malleable and cast iron screwed fittings for 150 pounds per square inch working steam pressure, cast steel flange standards up to 3200 pounds working steam pressure; cast iron flanges standards for 150 pounds pressure; cast iron flange standards for pressures under 100 pounds pressure; cast iron, screwed and flanged, long turn sprinkler fittings; ammonia fittings; screwed and flanged; screwed steel fittings and screwed nonferrous fittings. This gives a general idea of the importance and scope of the program before the sectional committee, which contains 62 members representing 30 organizations.

Extensive work on pipe and pipe fittings accomplished during the last four or five years in Germany, Switzerland and Holland, by the national standardizing bodies working in close co-operation has now reached a tentative conclusion. These countries have under consideration well advanced drafts of standards that are in close agreement. It is likely that western and central Europe will adopt a comprehensive international system of pipe and pipe flange standards, in the near future, and this system will include all kinds of metallic pipe, cast, iron, steel, etc., and the fittings used with all types of such pipe, together with standard sizes and forms of gaskets and other accessory items.

FIG. 2—THIS SUPPORT ARM IS PRODUCED ENTIRELY BY A DRAWING OPERATION

It has been decided to undertake the standardization of pins and washers on a national scale under the auspices and

procedure of the American Engineering Standards committee. The work, which will include taper pins, split pins, straight pins, dowel pins, plain washers and lock washers, will be carried out by a thoroughly representative sectional committee working under the sponsorship of the American Society of Mechanical Engineers. The work was proposed by the war department on account of difficulties which had been encountered in securing these small but important supplies, made interchangeably, from different industrial sources, and a special committee found upon investigation that there was a general desire for national uniformity in these supplies.

Foundry Sand Vibrators Prove Fatal

In Wisconsin during a period of six weeks three men using electric sand vibrators operated on 110-volt circuits received fatal electric shocks. These fatalities prompted a safety bulletin, "Foundry Vibrator Hazard," to be issued by the accident causes and remedies committee of the Milwaukee Association of Commerce. The findings and suggestions of that committee may be of interest to foundries.

Investigations lead to the assumption that the accidents probably were due to a deterioration of the insulation, resulting in a breakdown either of the coil or its terminals, thus making the metal frame alive. Because of damp shoes and the normally moist sand floor, the operator sustained a sufficient shock, even from the 110-volt circuit, to stop breathing. In at least one instance, no one immediately present knew how to apply the Schaefer or other approved method of artificial resuscitation.

The bulletin suggests that the metal frame of the vibrator should be electrically connected to a water pipe ground, using a 3-conductor cord and a 3-contact, polarity-type plug and receptacle. This receptacle should be mounted on the wall on a counterweight "take-up" provided for the slack, instead of plugging into a lamp socket. With this arrangement, any defect in the insulation will reveal itself immediately by blowing the small fuse in that particular circuit, thus preventing shock to the workman.

The Wisconsin electrical code requires that this protective grounding of the frame be provided for all portable devices, small motors, etc. In case the employer neglects to have it done, compensation may be increased 15 per cent, amounting in the case of a fatal accident to about $800 and which amount, under the law, must be paid by the employer and not the insurance carrier.

Press Twice Repaired by Gas Welding

Claim has been made frequently that welded sections have greater strength than the original sections and laboratory tests have proved this contention. Lack of nondestructive tests, however, has made it impossible to test machinery repaired by welding, consequently there has been some doubt as to whether in practice welded sections do possess increased strength. An interesting repair job handled by the Allmetals Welding & Mfg. Co., Baltimore, however, tend to answer the question.

Fig. 1 shows a punch press frame, a gray iron casting weighing approximately 2 tons. An overload on the press caused the casting to break squarely off at the level of the table. The frame was cracked through a rectangular section 18 inches wide, 20 inches deep, 6 inches thick at the front, 1½ inches thick at the back and 2 inches thick at the sides. After the edges of the break were carefully veed and the frame accurately aligned, the casting was preheated by gas burners and an oxyacetylene weld made by competent operators. The casting was covered carefuly to protect it from any draft during welding and this covering was left in place until the casting had become thoroughly cooled. After proper annealing the punch press frame was put back in servive and for a year stood up under its work. During another overload, however, the frame again broke but this time the break was in the crank bearing 4 feet away from the weld, which was unharmed. Neither was the new break in the region preheated for the weld. Fig. 2 shows the casting as it appeared after a second weld was made and the frame prepared for another term of service. The first and second welds are indicated by the series of crosses.

Approves Pipe Standards

The American Engineering Standards committee announces the approval, as tentative American standards, of American Society for Testing Materials specifications for welded and seamless steel pipe and welded wrought-iron pipe. The American Society for Testing Materials initiated work on specifications for steel pipe in 1915 and on wrought-iron pipe in 1918. In 1921 the work broadened to include seamless as well as welded pipe and was modified to bring them in accordance with the American standard pipe thread. The approval action by standards committee was taken in accordance with the recommendation of a special committee under the chairmanship of Stanley G. Flagg Jr.

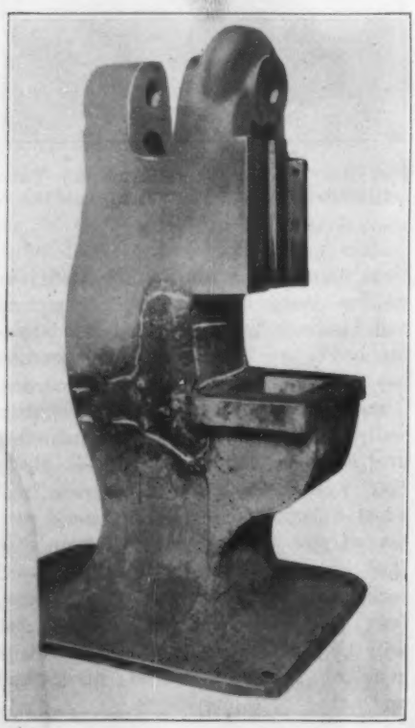
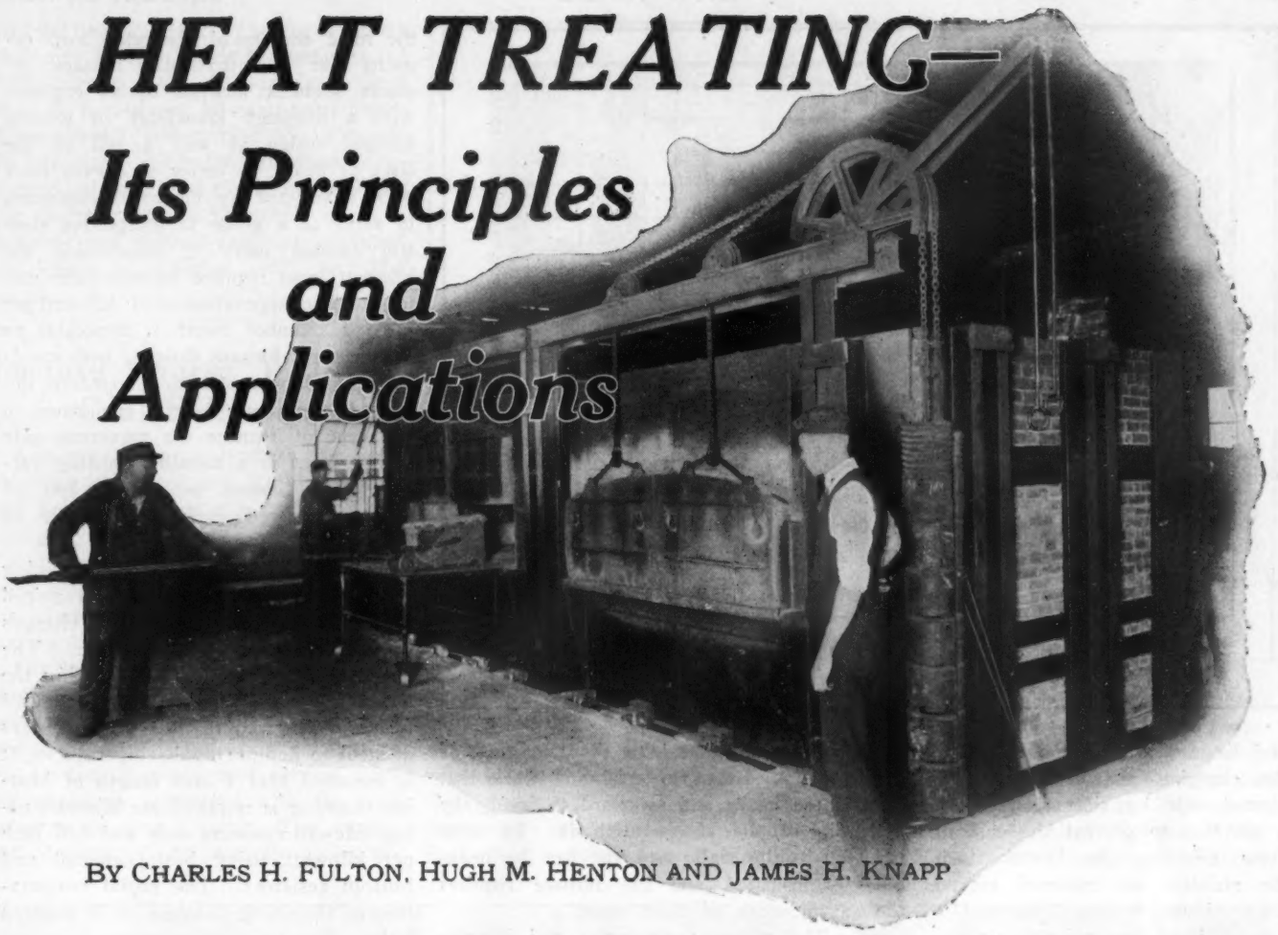


FIG. 1—A PUNCH PRESS FRAME WHICH BROKE AT THE TABLE LEVEL WAS REPAIRED BY WELDING AS SHOWN BY THE WHITE LINES

FIG. 2—THE FRAME SHOWN IN FIG. 1 BROKE AGAIN, THIS TIME IN THE CRANK BEARING. CROSSES INDICATE OLD AND NEW WELDS

HEAT TREATING—Its Principles and Applications



BY CHARLES H. FULTON, HUGH M. HENTON AND JAMES H. KNAPP

Chapter IX—Electric Furnaces (Continued)

THE intermittent or batch type of electric furnace is ordinarily small and of standard construction. It is used for all kinds of heat treating operations including:

(a) Heat treating of miscellaneous pieces
(b) Heating for quenching
(c) Normalizing
(d) Annealing
(e) Carburizing
(f) Ageing

These furnaces are common in automobile factories and are often arranged with a charging machine to reduce the labor required for loading and unloading. In furnaces of this type the charge rests on brick piers and is lifted in and out by charging fingers which slip in between these piers.

Muffles Are Eliminated

Another important and constantly growing field for the batch furnace is in the baking of enamelware such as bath tubs, stove parts and other vitreous coated products. The use of the electric furnace in this connection is specially important because the muffle necessary with fuel-fired furnaces can be eliminated, which means elimination of muffle repairs, temperature control due to elimination of heat lag through muffle, lower temperature in furnace with correspondingly lower radiation losses and furnace repairs.

The pusher type furnace usually is of similar construction to the batch type with the addition of skid rails and pusher. A door opening at both ends usually is provided. In furnaces of this type the material is contained in pans having three sides, the open side being the discharge side. In some furnaces as the pans are pushed out of the furnace, they slide down discharge rails until they strike a stop when the material slides out of the pans and into the quenching bath which is nearby.

The designs of continuous chain conveyor furnaces are fairly numerous. The principles, however, are usually the same. The chain for conveying the hearth, cross bar hearth, and sprockets inside the furnace are made of heat resisting alloy to withstand the heat. The chain returns through the brick work of the furnace and is enclosed as completely as possible to reduce heat loss from this source. The furnace is a complete unit, the motor and gear reduction being mounted under the furnace proper, away from the heat.

Rotating Units Have Range

Circular rotating hearth furnaces have proven exceedingly satisfactory for accurate heating of all sizes of materials, ranging from the smallest watch dials to complete sets of automobile springs

Gives Applications of Electric Furnaces

IN the accompanying installment, which is the second of Chapter IX, the authors discuss types of electric heat treating furnaces and outline briefly uses for which they are designed. A later installment will take up the design of resistors and methods of furnace control. Chapter I of the series appeared Oct. 4; Chapter II was published in the issues of Oct. 18, Nov. 1 and Nov. 15; Chapter III in the issues of Nov. 29, Dec. 13 and Dec. 27; and Chapter IV in the issue of Jan. 10. Chapter V appeared in the Jan. 24, Feb. 7, Feb. 21, March 6 and March 20 issues. Chapter VI appeared April 3, April 17, May 1 and May 15. Chapter VII appeared May 29, June 12, June 26, July 10 and July 24. Chapter VIII appeared Aug. 7, Aug. 21 and Sept. 4. Chapter IX appeared Sept. 11.

Charles H. Fulton is director of school of mines and metallurgy, University of Missouri; Hugh M. Henton is consulting metallurgical engineer and assistant professor of metallurgy and mining, State College of Washington, and James H. Knapp is industrial engineer, Los Angeles.

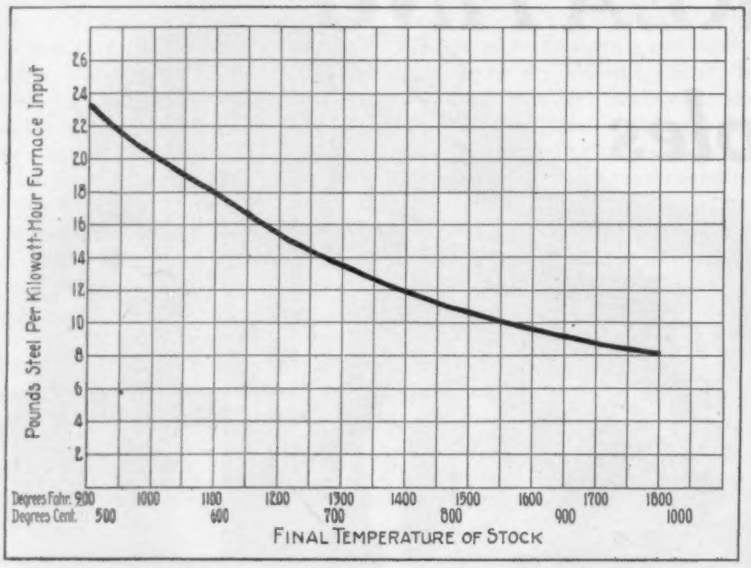


FIG. 83—CURVE SHOWING THE KILOWATT-HOURS INPUT REQUIRED TO HEAT STEEL TO VARIOUS FINAL TEMPERATURES

and large gears. In most of the units, the charging and discharge doors are located side by side but separated by a partition to prevent the cold material from affecting the heated stock, and the resistors are mounted around both sides of the hearth. The roof of the furnace is of best refractory tile.

The electric car bottom type furnace largely is confined to the annealing of heavy pieces of material and work that is too heavy and awkward to handle by any of the above methods. In most cases, the walls and car can be heavily insulated, and the furnace requires a minimum of floor space.

The proper arrangement and location of the resistors and determination of the most economical connected load capacity for any particular furnace requires scientific analysis by an engineer with a thorough knowledge of electric furnace design as well as all of the laws of heat. A series of curves have been developed by electrical engineers to serve as a guide to prospective electric furnace users in determining the kilowatt input required to heat their material. The approximation 1 kilowatt per inch of chamber length is applicable to most electric furnace designs; with standard resistor construction heretofore described. For more general application to any type of furnace the maximum safe energy input in a metallic resisting furnace is 3 kilowatt per square feet of resistor covered surface per hour of operation.

Fig. 83 shows a curve for determining the kilowatt-hour furnace input required to heat different weights of steel charges to various final temperatures. The curve also is helpful in determining the length of heating chamber with sidewall resistors required to heat given masses of steel to definite final temperatures. It is assumed that 1 inch length of heating chamber is required per kilowatt using sidewall resistors only and 0.67 inch per kilowatt using both sidewall and bottom resistors. The initial temperature of the stock is taken as 68 degrees Fahr. For example, suppose it is desired to heat 600 pounds of steel 1 hour

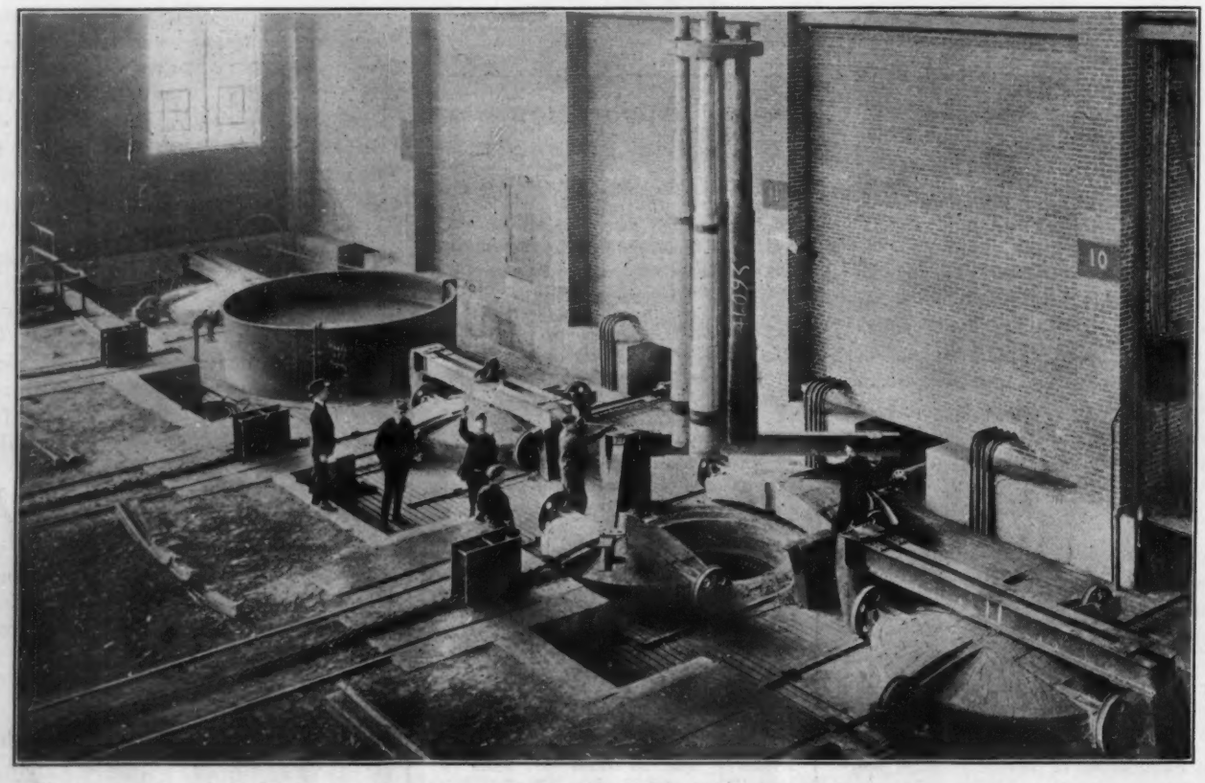


FIG. 84—A TYPICAL INSTALLATION OF ELECTRIC FURNACES FOR HEAT TREATING GUN FORGINGS. THE HANDLING OF THE FORGINGS VERTICALLY REQUIRES SPECIAL CRANES AND OTHER EQUIPMENT

to 1400 degrees Fahr. The curve shows that for a final stock temperature of 1400 degrees Fahr. 12 pounds of steel may be heated per kilowatt-hour input. Consequently, 600 divided by 12 equals 50 kilowatts. Therefore, if sidewall resistors only are used the length of heating chamber will be 50 inches. If both sidewall and bottom resistors are used the length of chamber will be 33.5 inches.

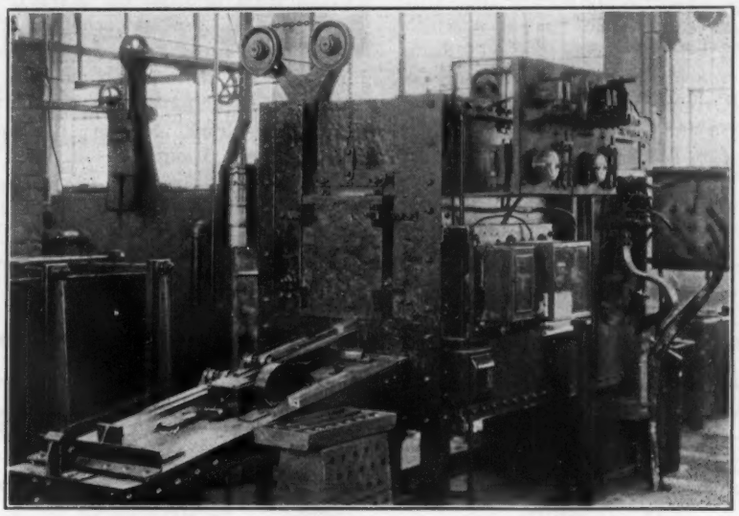


FIG. 86—CHARGING END OF ELECTRIC TOOL HARDENING FURNACE WITH PUSHER ARRANGEMENT

Lecture Course Will Aid Coal Salesmen

A new course of lectures for coal salesmen on "Coal and Its Utilization" will be given during the coming night college year at Carnegie Institute of Technology, Pittsburgh, in co-operation with the bureau of mines and an advisory board of coal mine operators and engineers.

The lecturers for the course will include faculty members of Carnegie Institute of Technology, experts attached to the Pittsburgh station of the bureau of mines, and several mining engineers associated with the coal industry of that district. The course will consist of 22 lectures given on Friday evenings of each week from Oct. 17 to March 2, 1925.

The subjects of lectures to be given will include: "General Review of the Coal Industry," by H. H. Eavenson, consulting mining engineer, and C. E. Lesher, assistant to president, Pittsburgh Coal Co.; "Elements of Chemistry as Related to the Coal Industry," A. C. Fieldner, superintendent, Pittsburgh experimental station, bureau of mines; "Elements of Physics as Related to the Coal Industry," Dr. J. B. Nathanson, assistant professor

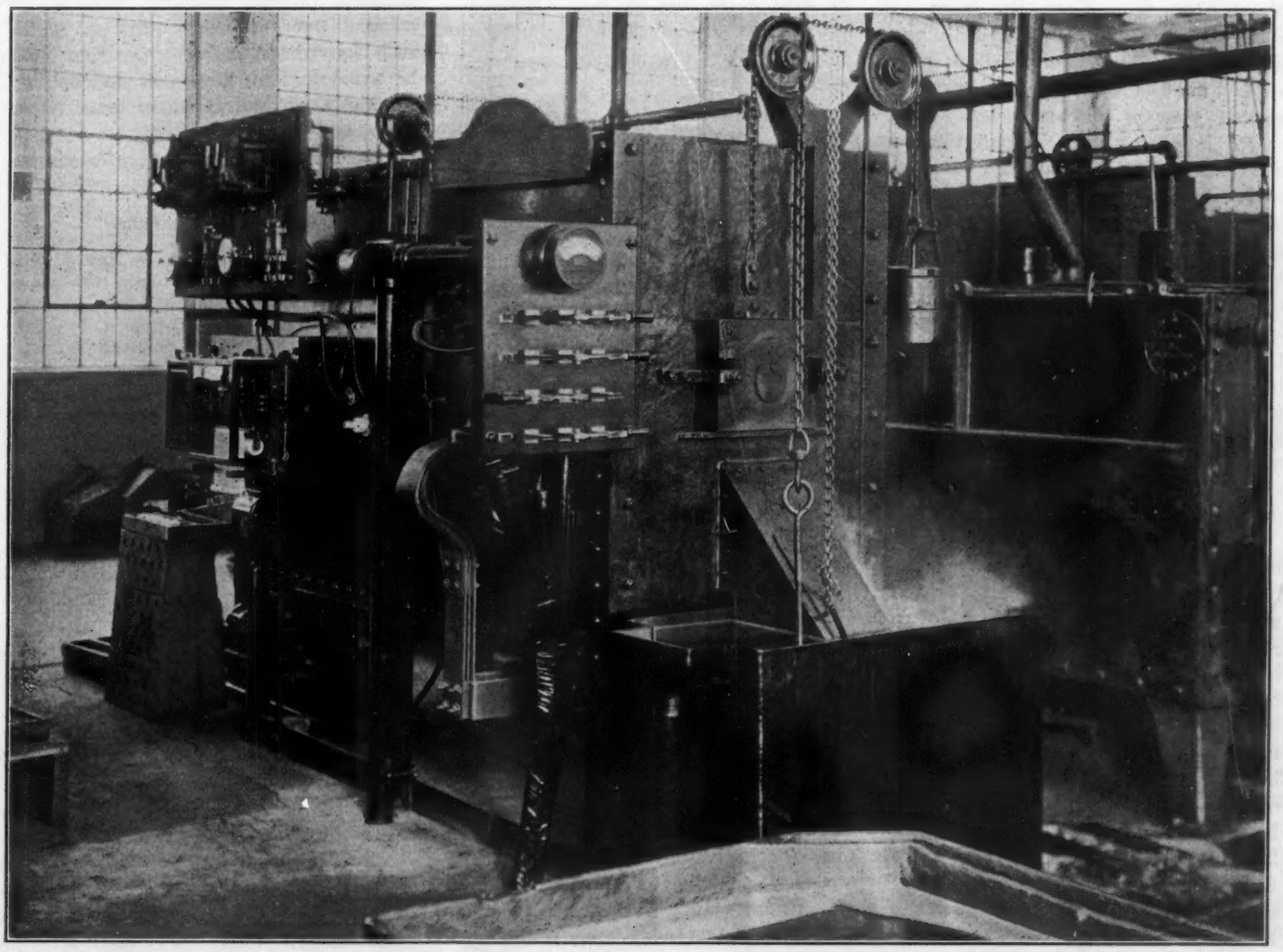


FIG. 85—FRONT VIEW OF CONTINUOUS TOOL HARDENING FURNACE SHOWN IN FIG 86

of physics, Carnegie Instutite of Technology; "The Manufacture and Utilization of Coke, with Special Attention to By-Product Coking," C. J. Ramsburg, vice president The Koppers Co.; "The Origin of Coal," Dr. C. R. Fettke, associate professor of geology, Carnegie Institute of Technology; "Coal Resources and Markets of the U. S.," and "Coal Resources and Markets of Foreign Countries," Dr. Fettke; "The Economics of Coal Production," W. L. Affelder, assistant to president, Hillman Coal & Coke Co.; "Preparation of Coal for Market," Dr. H. F. Yancey, associate chemist, Pittsburgh experimental station, bureau of mines; "Combustion of Coal," H. W. Brooks, fuel engineer, Pittsburgh experiment station, bureau of mines; "Getting the Most Out of Coal," illustrated with motion pictures and "Marketing of Coal as Related to Transportation and Quality," J. D. A. Morrow, vice president and general manager, Joy Machine Co.

Reviews of New Books

Covers the Foundry Field

Penton's Foundry List, flexible leather, 621 pages, 4 x 6¾ inches; published by the Penton Publishing Co., and furnished by IRON TRADE REVIEW at $25 postpaid.

Covering its field as no other publication ever has done, this compilation of information relating to foundries in the United States and Canada in its current biennial issue has even more to offer than in the past. It is the only directory of the foundry trade of North America, gives the name of every foundry, tells the kind of castings produced, gray iron, malleable iron, steel, brass and aluminum and whether a pattern shop or machine shop is operated in connection. To aid the user a separate list is presented of steel, malleable and nonferrous foundries, the latter being separated into those which are departments of gray iron or malleable foundries and those devoted exclusively to nonferrous production. A list also is given of electric steel foundries. This arrangement aids in covering each field without the labor of going through the entire list. The arrangements of each section is natural and easy to consult, being alphabetically by states, then by cities and finally by company names.

An added feature this year is information as to the number and kind of furnaces and the melting capacity, which gives an accurate idea of the relative size of the various plants. This information never before has been obtainable from any other source. In a growing and expanding country and in an active industry like the foundry business constant changes are going on which alter the situation month by month. This is illustrated by the fact that the present edition lists more than 500 foundries not contained in the previous issue, while 700 shops listed two years ago now are out of business and nearly 150 have changed their names or addresses. The total changes from the previous issue are nearly 1500.

As in the past, the book is mechanically of high grade. The paper is durable, though thin, to withstand much use, the segregated lists are on contrasting colors to make access easy and the binding is such as to allow flat opening on the desk without loosening the back. As an authoritative index to the foundry trade it covers its field fully and is not approached by any other publication, forming the only guide to the industry.

* * *

Peering Into The Future

The Problem of Business Forecasting, edited by Warren M. Persons, William Trufant Foster and Albert J. Hettinger Jr.; cloth, 317 pages, 5¼ x 8 inches; published by the Houghton Mifflin Co., and furnished by IRON TRADE REVIEW for $4 postpaid.

The text of this volume is developed from papers presented at the eighty-fifth annual meeting of the American Statistical association and deals with the statistical basis for analyzing current economic problems for the purpose of making forecasts of business activities. It develops forecasting in general and also in specific industries. Inasmuch as human conduct is based largely on forecasts and the latter on statistics, the value of accurate methods of judging the future trend of events is great. Mistakes in judgment are based on unreliabile statistics or faulty reasoning. The business man must forecast, whether well or badly, and his success or failure depends on the aggregate of his forecasts. This book has for its central theme the statistical basis for analyzing current economic conditions. In the various chapters specialists deal with such problems as those involved in predicting cotton crops, metal prices, demand for lumber, freight car loadings foreign trade and automobile production. The problems discussed are not academic but are part and parcel of trade and industry.

* * *

Protecting Workers' Eyes

Eye Hazards in Industrial Occupations, by Louis Resnick and Lewis H. Carris; 247 pages, 6 x 9 inches; published by the National Committee for the Prevention of Blindness, Inc., New York, and supplied by IRON TRADE REVIEW, Cleveland; paper, $1.50; fabrikoid, $2.50. Special prices on quantities on application.

This is a handbook for safety engineers, safety inspectors, safety committeemen, industrial physicians and nurses; for those responsible for industrial operations; for governmental officials, trade association executives, social agency workers and all others who share the responsibilities and opportunities for conserving the life, health and sight of the millions engaged in industries. The impressive point of this book is its thoroughness, the great amount of information of a practical character that has been compressed into it; the 59 illustrations that are particularly clear and forceful, and the large amount of tabular and statistical matter. The sole object in publishing such a book is to prevent blindness through industrial hazards, by pointing out the many ways in which such hazards arise and how they may be avoided. This the book accomplishes admirably, and the wealth of detail makes it valuable for intensive study of the subject, or for continuous reference.

* * *

A Basis For Metals Science

The Science of Metals, by Zay Jeffries and Robert S. Archer; cloth, 460 pages, 6 x 9 inches; published by the McGraw-Hill Book Co., and furnished by IRON TRADE REVIEW, for $5 postpaid.

Because art precedes science and men learn how before they know why, the metals industry has developed as the result of numberless experiments for which there were no general guiding principles. Study of metals and alloys in use for centuries has been intensive during only the past half century. Investigation of the structure and properties of metals and alloys has resulted in the accumulation of a prodigious fund of information which has yet to be digested and assimilated.

With the aim of setting forth general guiding principles the material used for illustrative purposes is of distinctly practical nature. Discussion of various metals and alloys is generally proportionate to their commercial importance. The book is designed as a text for college use as well as an interesting and valuable treatise for those with field experience.

News of Societies

Past and Coming Meetings of National and Local Trade and Technical Organizations

SUBJECTS covered in the program of the forthcoming meeting of the American Electrochemical society to be held at the Hotel Tuller, Detroit, Oct. 2, 3, and 4 have a wide commercial bearing. Two sessions will be devoted to the subject of corrosion, which is of interest not only the electrochemist but to engineers in every field of activity. An open forum "Industrial Electric Heating," also will be held. Sessions on "Refractories for Electric Furnaces" and the "Physcial Chemistry of Electrodeposition," are provided.

Two round table discussions have been arranged; one on "Electric Furnace Cast Iron," in charge of G. K. Elliott, Lunkenheimer Co., Cincinnati, and the other, on "Control Methods in Electrodeposition," in charge of Prof. O. P. Watts, University of Wisconsin, and Dr. William Blum, of the bureau of standards.

An elaborate program of entertainment has been prepared. For Wednesday evening, a "get-together" fish, frog and chicken dinner at Eastwood Inn has been arranged. Other entertainment features include a smoker at Hotel Tuller roof garden, automobile trips and theater party for the ladies, and visits to a number of the large automobile plants.

The technical program is as follows:

Thursday, Oct. 2

9:30 a. m. Symposium on "Corrosion," Dr. B. D. Saklatwalla, chairman.
F. N. Speller: Film Protection as a Factor in Corrosion.
Cecil H. Desch: The Microchemistry of Corrosion.
Nlich R. Evans: The Relation between Tarnishing and Corrosion.
J. Newton Friend, D. W. Hammond and G. W. Trowbridge: The Influence of Emulsoids upon the rate of Solution of Iron.
W. H. Hatfield: The "Stainless" Chromium Steels.
F. N. Speller and F. G. Harmon: Comments on Electrolytic Theory of Corrosion by Wilder D. Bancroft.

12:30 p. m. Round Table Discussion at luncheon, Hotel Tuller. "Electric Furnace Cast Iron," Geo. K. Elliott, chairman.

2:00 p. m. Symposium on "Corrosion" (continued).
C. M. Kurtz and R. J. Zaumeyer: The Corrosion of Iron Alloys by Copper Sulphate Solution.
Geo. P. Ryan: The Effect of Cold Working on the Corrosion of Metals.
E. W. Greene and O. P. Watts: Effect of Reduced Pressure on the Rate of Corrosion of Amalgamated Zinc in Acid and in Alkali Solutions.
Wm. E. Erickson and L. A. Kirst: Tests for Grading Corrosion Resisting Alloys.
Colin G. Fink and Li Chi Pan: Insoluble Anodes for Brine. The Lead-Silver Series.
H. S. Rawdon and A. I. Krynitsky: Notes on Corrosion Testing by Different Immersion Methods.

6:00 p. m. Meeting of the board of directors at dinners, Hotel Tuller.

8:30 p. m. Smoker at the Hotel Tuller, roof garden.

Friday, Oct. 3

9:00 a. m. Symposium on "Industrial Electric Heating," Professor C. F. Hirschfeld, chairman.
A. E. White: The Use of Electric Furnaces in Heat Treatment.
R. H. McGillivray: Electric Furnace for Continuous Hardening and Tempering Wire.
Robert M. Keeney: Annealing of Brass Tubing in the Electric Furnace.
Symposium on Electric Furnace Refractories, Dr. M. L. Hartmann, chairman.
M. L. Hartmann and O. B. Westment: Thermal Conductivity of Carborundum Refractories.
C. E. Sims, H. Wilson and H. C. Fisher: Preparation of Artificial Sillimanite.
Frank T. Sisco: Fluorine in the Deoxidizing Slag and its Influence on Refractories in Basic Electric Furnace Practice.

12:30 p. m. Round Table Discussion at Luncheon, Hotel Tuller. "Control Methods in Electrodeposition," in charge of O. P. Watts and William Blum.

2:30 p. m. Fr. Foerster: Electrolytic Chlorate as a Secondary Product. (The Electrolysis of Hypochlorite Solutions.)
Thomas P. Campbell: The Electrolysis of Ammoniacal Zinc Carbonate Solutions.
M. deK. Thompson: The Production of Chromates from Ferro-Chromium Anodes.
Per K. Frolich: The Introduction of Carbonaceous Matter in Electrodeposited Iron and Nickel.
H. E. Haring: Throwing Power, Cathode Potentials and Efficencies in Nickel Deposition.
Per K. Frolich: The Amphoteric Character of Gelatine and its Bearing on Certain Electrochemical Phenomena.

8:00 p. m. Board of Commerce Auditorium., Alex Dow, president of the Detroit Edison Co., "Central Station Design and Super-Power."

Saturday, Oct. 4

9:00 a. m. J. R. Cain: Influence of Sulphur, Copper, Oxygen and Manganese on the Red Shortness of Iron.
R. F. Mehl: Experiments on the Preparation of Very Pure Alloys and a Preliminary Study of Certain Electrical Properties of the System Al-Mg.
Louis Kahlenberg and H. H. Kahlenberg: On the Preparation of Metallic Tungsten and some of Its Alloys.
H. C. P. Weber and R. H. Wynne: Halogenated Hydrocarbons and Dielectrics. I. Effect on Flash and Fire Point of Trasnformer Oils.
A. E. R. Westman and R. B. Walker: The Relation between Current Voltage and the Length of Carbon Arcs. III. Alternating Currents.

* * *

Convention Calendar

Sept. 22-26—American Society for Steel Treating. Annual convention and exhibition, Commonwealth Pier, Boston. W. H. Eisenman, 4600 Prospect avenue, Cleveland, is secretary.

Sept. 29-Oct. 3—National Safety Council. Annual safety congress, Louisville, Ky. W. H. Cameron, 168 North Michigan avenue, Chicago, is secretary.

Sept. 30-Oct. 3—National Safety Congress. Annual meeting under auspices of National Safety council, Brown hotel, Louisville, Ky. W. H. Camerson, 168 North Michigan avenue, Chicago, is managing director.

Oct. 2-4—American Electrochemical society. Fall meeting at the Hotel Tuller, Detroit. Colin G. Fink, Columbia university, New York, is secretary.

Oct. 8, 9 and 10—National Machine Tool Builders Association. Annual convention at Hotel Aspinwall, Lenox, Mass. Ernest F. DuBrul, 630 Vine street, Cincinnati, is general manager.

Oct. 13-15—American Institute of Mining and Metallurgical Engineers. Annual meeting at Tutweiler hotel, Birmingham, Ala. F. F. Sharpless, 29 West Thirty-ninth street, New York, is secretary.

Oct. 13-16—American Foundrymen's association. Annual convention and exhibition, Auditorium, Milwaukee. C. E. Hoyt, 140 S. Dearborn street, Chicago, is secretary.

Oct. 13-17—National Hardware Association of the United States. Metals branch. Annual convention, Atlantic City, N. J. George A. Fernley, 505 Arch street, Philadelphia, is secretary.

Oct. 16-18—American Gear Manufacturers' association. Semiannual meeting at Briarcliff Lodge, Briarcliff Manor, Westchester county, N. Y. T. W. Owen, 2443 Prospect avenue, Cleveland, is secretary.

Oct. 20-25—National Management Week. Simultaneous meetings will be held in 65 cities of the United States and Canada. Ernest Hartford, 29 West Thirty-ninth street, New York, is secretary of the committee on arrangements.

Oct. 22-24—National Association of Farm Equipment Manufacturers. Annual meeting at Congress hotel, Chicago. H. J. Sameit, 608 South Dearborn street, Chicago, is secretary.

Oct. 30-31—American Welding society. Annual fall meeting, Hotel Winton, Cleveland. M. M. Kelly, 29 West Thirty-ninth street, New York, is secretary.

Nov. 13-15—American Institute of Steel Construction. Annual convention, French Lick Springs hotel, French Lick, Ind. C. F. Abbott, 350 Madison avenue, New York, is executive director.

Engineering Council Board To Meet

A meeting of the administrative board of the American Engineering council has been called for Oct. 17 and 18 in Chicago. The board will convene at the headquarters of the Western Society of Engineers, President James Hartness presiding.

* * *

Institute of Metals Meets

The annual meeting of the Institute of Metals was held in London on September 8, 9 and 10. It was announced that Professor T. Turner of the University of Birmingham has been elected president for the next term. Sir John Dewrance, chairman, Messrs. Dewrance & Co., Great Dover street, London and Sir William Smith, London, have been re-elected vice presidents.

Following the presentation of the seventh report of the corrosion research committee it was announced that this work now is divided between the Department of Industrial and Scientific Research for the technical side of the problems involved and that the Institute of Metals would carry on the work relating to the more practical aspect. Among the dozen papers that were discussed at the meeting was one entitled "The Method for Measuring Internal Stress in Brass Tubes" by Robert J. Anderson, Boston and Everit G. Fahlman, Cleveland, and presented by W. M. Corse, National Research Council, Washington. Mr. Corse,

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Display Machines at New Haven

Fourth Annual Exhibition of Machine Tools at Yale Unversity Attracts Widespread Attention—Technical Sessions and Meetings of National Standardization Committees Held—Machines Shown Under Power

MORE enthusiastic praise seldom if ever has been accorded a machine tool exhibit in this country than that tendered the display at Mason laboratory, New Haven, Conn., Sept. 15-18. Conducted under the auspices of the local section of the American Society of Mechanical Engineers, Yale university, and the New Haven chamber of commerce, the exhibit was a success not only because of the character and number of machines displayed, but by virtue of the smooth fulfillment of arrangements and the countrywide interest that had been aroused. The meeting, which took on a national aspect, was the fourth to be held in New Haven.

A technical program, arranged by a committee headed by Earle Buckingham, of Hartford, Conn., proved both timely and instructive. The sessions held in Dunham laboratory, nearby, were all well attended. In conjunction, there were meetings of several national committees, including the National Screw Thread commission. In this and in the contributions to the program of the machine shop division of the American Society of Mechanical Engineers and the National Machine Tool Builders association were seen recognition of the growing importance of the exhibit.

More than 18,000 visitors attended the exhibit, 18 states, five European countries and Australia being represented. With the show held a week prior to the exhibition of the American Society for Steel Treating in Boston, many went to New England from the Atlantic and middle western states to avail themselves of the benefits of this double attraction. Significant was the fact that local manufacturers and some of those cities nearby sent to the show such workmen as might be interest, the employes arriving in groups at times during the various days when it was believed there might be the least congestion.

Machine Tool Exhibits Reflect Trend in Design

MARKED progress in design was reflected by the equipment on display, even as compared with a year ago. The appeal of the committee to exhibitors to eliminate stock models insofar as possible, and to concentrate their efforts in the display of their newest features had been met with excellent response. Indicating the co-operation and interest extended by the manufacturers generally, one Cleveland builder shipped by express a new machine, weighing between 3000 and 4000 pounds.

While difficult to point to a dominating trend in the yearly development of equipment displayed, an outstanding feature undoubtedly was the greater simplicity and convenience of the controlling elements and handling and operating mechanisms of many of the machines. The application of motor drives also was notable. A number of new models were shown, with the motor as an intrigal part, and there is little question but what builders in increasing number are quoting machines with the motor as a component part and shaft drive attachments as extra, whereas not so very long ago, exactly the reverse was true.

New Turret Lathe Shown

A new universal turret lathe was displayed by the Warner & Swasey Co., Cleveland. The machine has 16 feeds changes, eight of which are obtained by levers located in the turret apron. To withstand the increased feeding pressure required of the turret an outside split-ring binding mechanism is furnished which binds the turret to its saddle rigidly. The gears, located in the head are of chrome steel. The automatic chuck is equipped with spring master collect bushings for round, square and hexagon stock. An overhead piloted turning head was offered for the first time as a standard accessory.

The Leland-Gifford Co., Worcester, Mass., exhibited a 3-spindle sensitive drill, with tapping attachments and an automatic return power feed; also, a sensitive drill, with a 4-speed alternating current motor built into the machine. A high speed drill, capable of obtaining a speed of 10,000 revolutions per minute on drilling and 6000 on tapping was demonstrated. A direct motor driven twist drill grinder and a line of standardized jig bushings also were shown by this company.

Included in the equipment displayed by the Brown & Sharpe Mfg. Co., Providence, R. I., was a double automatic screw machine, featuring a high speed spindle with a rating of 5000 revolutions per minute. In this machine and also in a universal milling machine on display, the motor is located in the base. An automatic, self-contained motor driven milling machine was set up to produce hair clipper parts at the rate of 170 per minute. The Brown & Sharpe company also exhibited a line of small tools and cutters.

The Pratt & Whitney Co., Hartford, Conn., displayed a 2-spindle thread hobber, for turning out stub pinions or any work that has to be chucked. Its chief feature is its provision for practically continuous cutting, one spindle always being in the cutting position while the other is out in front in position for reloading. It has a 2-motor drive, one for the cutter head and the other for the main mechanism of the machine. Among other equipment shown by this company was a 6-inch vertical shaper, which was a redesigned machine, equipped especially for motor drive, and a 13-inch lathe, which was an exact reproduction of a 16-inch machine produced last year. A complete bench-equipment, a universal milling machine and a high speed sensitive drill press also were in operation. The Niles-Bement-Pond Co., New York, had a right line radial drill under power.

Exhibit Measuring Device

A new measuring machine, adaptable to measuring leads, outside diameters, etc., was exhibited for the first time by its manufacturer, the Hanson-Whitney Machine Co., Hartford, Conn. A tool and die shaper, a thread miller and a line of hard ground precision lead screws, ranging from 0.01 pitch to one thread per inch, also were displayed. The S-K-F Industries Inc., 165 Broadway, New York, exhibited ball bearings and transmission equipment. A grinder equipped by the company with a ball bearing spindle was used to demonstrate

the grinding of the outside diameter of ball races.

One of the larger exhibits was that of Henry Prentiss & Co., Hartford, Conn. Three new machines were shown, namely, an automatic internal grinding machine, built by the Gidding & Lewis Machine Tool Co., Fond du Lac, Wis., with a new hydraulic feed and an automatic sizing device; a metal cutting band saw, built by the Henry G. Thompson & Son Co., New Haven, Conn., embodying a new automatic feed; and a multiple chucking machine. Other machines on display included a 32-inch shaper built by Gould & Eberhardt, Newark, N. J., a universal milling machine by the American Milling Machine Co., Cincinnati; a 2-spindle intensive high speed drill, capable of turning 12,000 revolutions per minute built by the Avey Drilling Machine Co., Cincinnati; a 12-inch tool room lathe made by the Lodge & Shipley Machine Tool Co., Cincinnati; a power press and a threading and timing machine manufactured by the V. & O. Press Co., Hudson, N. Y.; and a high speed manufacturing drill built by Baker Bros., Toledo, O.

Featuring the exhibit of the Keller Mechanical Engineering Corp., Brooklyn, was a straight line reducing machine, whereby the length, width or depth of the pattern can be enlarged or reduced.

An interesting assortment of machine tools was exhibited by Purinton & Smith, Hartford, Conn., including a shaper, manufactured by the Ohio Machine Tool Co., Kenton, O., having a 3-piece gib and an instantaneous feed. New developments also are incorporated in connection with length of the rocker arm and the height of the bull gear. The machine also is equipped with an improved table support. A grinding and polishing machine, built by the Diamond Machine Co., Providence, R. I., equipped with a so-called ventilated motor; an internal grinder, with new motor drive, manufactured by the Rivett Lathe & Grinder Corp., Boston; a horizontal spindle and a vertical spindle grinder manufactured by the Abrasive Machine Tool Co., Providence; a milling machine built by the Van Norman Machine Tool Co., Springfield, Mass.; and a drilling machine built by the Kingsbury Mfg. Co., Keene, N. H., were demonstrated under power.

Of considerable interest was an internal grinder which is just being placed on the market by the Heald Machine Co., Worcester, Mass. Its outstanding features are a hydraulic feed, which controls the table, and an electric sizing device, which times the wheel on each piece. Work can be ground to within limits of 0.0001 inch. The American Crusher & Machinery Corp., 1 Madison avenue, New York, demonstrated a new machine designed solely for crushing borings and turnings to increase the salvage value of the scrap for the producer and to facilitate the handling for the consumer, and also, it is claimed, to prevent losses by "burning down."

Welding equipment was demonstrated by the Oxweld Acetylene Co., Long Island City, N. Y., which also displayed a full line of stellite cutting tools. The Bausch & Lomb Optical Co., Rochester, N. Y., displayed highly specialized equipment, including a contour measuring projector and metallurgical miscroscopes. The Bridgeport Safety Emery Wheel Co., Bridgeport, Conn., exhibited a chain drive buffing lathe The New Departure Mfg. Co., Bristol, Conn., displayed ball bearings, and employed a novel demonstrating machine, which attracted considerable interest. A complete line of milling cutters was exhibited by Goddard & Goddard Co., Detroit.

Manning, Maxwell & Moore, Inc., Pershing Square building, New York, demonstrated a miller built by the Rockford Milling Machine Co., Rockford, Ill. It has a heavy rectangular overarm and the knee is clamped to the side of the column as well as to the front. A triple head bolt cutter with electric drive, built by the National Machinery Co., Tiffin, O., was shown. The machine is mechanically provided through gearing with from four to six speeds, according to the size of the model. Among other items was a die sharpener manufactured by the National company.

A 5-spindle automatic screw machine was shown at the booth of the National Acme Co., Cleveland. In addition to the adoption of five work spindles and right hand tools, there are numerous refinements in the application and support of the important mechanisms, and a rearrangement of working parts. One feature is a reduction in the number of cam changes to a minimum of forming, cut-off and lead only. An improved type of spindle carrier and casing is used. Both the spindle drive and the indexing mechanisms have been located between the spindle bearings. No drums or other operating parts are located beneath the tooling area, thus doing away with trouble that may develop from chips becoming lodged in the underworks. The National Acme Co. also had two multiple spindle chucking machines operating on interlocking work.

A shaper with a counterbalancing ram mechanism was demonstrated by J. L. Lucas & Son, Inc., Bridgeport, Conn. The machine has eight speeds, operated through a quick change gear box. A Crescent universal wood working machine and several presses were on display. The Gisholt Machine Co., Madison, Wis., exhibited a precision balancing machine for rotative parts. The New Britain Machine Co., New Britain, Conn., demonstrated a 6-spindle screw machine and a 4-spindle pneumatic air chucking machine.

In addition to an extensive display of cutting tools, John Bath & Co., Worcester, Mass., exhibited a new 2-inch internal micrometer. Yale & Towne Mfg. Co., Stamford, Conn., displayed several types of hoists. The General Electric Co., Schenectady, N. Y., had a direct heat electric furnace in operation, and also exhibited arc welding equipment, flow meters and other electrical equipment. The Garvin Machine Co., 13 Varick street, New York, operated several production tools, including an air operated chucking machine, an automatic tapping machine, and a horizontal duplex drill.

Economic and Technical Problems Are Discussed

ISSUING a warning against too great haste in adopting new standards, Luther D. Burlingame, Providence, R. I., in an address before one of the technical meetings, traced the development of standardization in the machine tool industry. He declared that in dealing with standardization the best and safest course is to go slowly and to guard against abandoning basic standards and established practices until the benefits of a change are made clearly evident.

An interesting paper on certain fundamental principles of measurement was presented by Earle Buckingham, Hartford, Conn. Little of the science of shop measurements has ever been reduced to writing, most of this information being acquired by observation. The ability to measure, he said, has thus been usually acquired in a haphazard manner—more as a collection of methods of how to measure forms and sizes than as a clear understanding of the theory and practice of measurement.

Mr. Buckingham declared that the real science of shop measurement lies in knowing what and why to measure, rather than in knowing how to measure. Too often, he stated, the question as to why a measurement should be made is ignored, with the result that indirect and complicated measurements are made

that have little effect on the control of the essential sizes that should be maintained. In his discussion, he outlined the measurements of length, touching on the interrelation between the yard and meter, and divided shop measurements into two general classes—direct and comparative.

D. H. Chason, Elizabethport, N. J., in an address entitled "Comparative Methods of Tool Design," spoke in relation to quantity production of sheet metal parts. He discussed the effect of quantity and tolerance on the choice of the die, and stressed the importance of the pillar-type subpress in production work, especially in connection with interchangeable parts.

Training for the Industries

A session was devoted to a discussion of industrial education and training, S. S. Edmunds, Pratt institute, Brooklyn, N. Y., presiding. R. O. Small, director of vocational training for the state of Massachusetts discussed the question from the standpoint of the boy first undertaking his training, while A. C. Jewett, of the National Industrial Conference board, New York, approached the subject from the angle of the manufacturer, enumerating the requirements of industry.

Dr. George K. Burgess, director of the United States bureau of standards, Washington, opened the first of the technical sessions, with an address in which he commented upon the continued development of the machine tool industry and on the interest manifested by the federal agencies, as reflected by their cooperative efforts.

Ernest F. Du Brul, whose paper entitled "Forecasting Demand for Industrial Equipment" was published in part in last week's issue, presided at a meeting of salesmanagers of various member companies of the National Machine Tool Builders association, of which he is general manager.

National Committees Meet

Among committee meetings were those of the special research committee on cutting and forming metals of the American Society of Mechanical Engineers, B. H. Blood, chairman; central committee of sectional committee on small tools and machine tool elements, H. E. Harris, chairman; working committee on standardization of tee slots, Erik Oberg, chairman; organization meeting of subcommittee on the standardization of tool holders and tool post openings; joint meeting of the sub-committee on methods of gaging manufactured material, F. O. Hoagland, chairman; and subcommittee on gages, their limits, manufacture and use, Earle Buckingham, chairman.

News of Societies

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had also given a lecture on "Recent Development in Nonferrous Metallurgy in the United States, with Special Reference to Nickel and Aluminum Bronze" on the previous evening.

It was announced that the next annual meeting will take place on March 11 and 12, 1925.

* * *

To Discuss Electrolytic Iron

"Recent Developments in The Manufacture of Electrolytic Iron" is the subject of a paper by Mr. F. A. Eustis which will be presented before the first fall meeting of the Boston section of the American Institute of Mining Engineers Monday, October 6.

* * *

Engineers in New Quarters

About 500 members and guests attended the housewarming and reception in the Engineers' Society of Western Pennsylvania headquarters in the William Penn hotel last Thursday night. President Frederic Crabtree, Vice Presidents Walter Spellmire and William E. Fohl, Treasurer A. Stucki and Secretary K. F. Treschow greeted the members who inspected the new club room, newly decorated and furnished, in the rear of the former offices.

The enlarged quarters were necessitated by the growth in membership since the society moved to the William Penn. The housewarming continued Friday and Saturday.

Beehive Coke Output Now On Dead Level

Washington, Sept. 22.—The production of beehive coke appears to have found a temporary level in the neighborhood of 110,000 tons a week says the Geological Survey. The total output in the week ended Sept. 13 is estimated at 111,000 net tons, against 112,000 tons in the preceding week. At this time last year the rate of output was such that almost as much was produced in two days as is now produced in a week. The record in net tons by districts follows:

	——Week-ended——		
	Sept. 13, 1924a	Sept. 6, 1924b	Sept. 15, 1923
Pennsylvania and Ohio	74,000	75,000	259,000
West Virginia	6,000	5,000	14,000
Alabama, Kentucky, Tennessee and Georgia	14,000	15,000	20,000
Virginia	8,000	8,000	13,000
Colorado and New Mexico	5,000	5,000	6,000
Washington and Utah	4,000	4,000	5,000
United States total	111,000	112,000	317,000
Daily average	19,000	19,000	53,000

(a) Subject to revision. (b) Revised from last report.

The output of soft coal is increasing sharply, the total for the week ended Sept. 13, being 9,531,000 net tons. This was a gain of 20 per cent over the total for Labor day week.

Add to Rolling Mill

Seattle, Sept. 17.—The Rounds-Clist Co. has the general contract for constructing a 250-foot addition to the rolling mill of the Pacific Coast Steel Co. The contract also involves concrete footings for the crane runway. The improvement will give the local mill increased warehouse space enabling it to carry more stock under cover. Added room was required by the opening of the universal plate mill and general expansion of business. The rolling mill extension involves 260 tons of steel and the crane runway 50 tons, all of which is being fabricated by the Wallace Equipment Co. The foundations are now about completed.

To Build Ships in Spain

Washington, Sept. 22.—According to consular reports to the department of commerce, Fredrich Krupp, of Germany, is planning construction of naval shipyards in Spain, the Union Naval Levante, having been organized in Barcelona, Spain, for the purpose. The new company has issued shares amounting to 14,000,000 pesetas, about $1,800,000, the reports state. Spanish metal, shipping and shipyard enterprises have participated in the organization.

Acquire Canadian Plant

Toronto, Ont., Sept. 22.—Negotiations have been completed by which John Lysaught Ltd. of Bristol and Newport, Eng., one of the largest producers of sheets in Britain acquires a substantial interest in the Dominion Sheet Metal Co. Hamilton, Ont. The Lysaught firm was represented by W. H. D. Gladstone of the Bristol plant. A. T. Enlow, the head of the Hamilton firm, will retain his position as president and managing director. The output will be increased and the plant probably will be enlarged.

To Merge Operations

New York, Sept. 23.—The Penn Seaboard Steel Corp. contemplates the merging of all of its operating plants at Newcastle, Del., where the company now has an open-hearth plant and blooming mill.

Robertson Resilient Wheel Corp., of Illinois, Chicago, has changed its stock from $100,000 to $50,000 and 500 shares no par value stock, and has changed its purpose.

Ohio Foundrymen in Convention

Two-Hundred Members of State Association Discuss Their Operating Problems and General Business Conditions—Greater Development Urged in Gray Iron Castings Industry

TWO-HUNDRED members of the Ohio State Foundrymen's association attended the fourth annual convention of the association at Hotel Cleveland, Cleveland, Sept. 18 and 19. Discussions ranged from certain features of foundry operation, and the development of the foundry business, to general business conditions and international affairs. The members of the association were welcomed to the city by the mayor, Clayton C. Townes.

William Huggins, former judge of the Kansas industrial court and now associated with the League for Industrial Rights, New York, made a strong plea for the establishment of more harmonious relations between employer and employe. While fully conceding the constitutional right of employers and employes to organize, he strongly deprecated the methods too frequently employed in obtaining concessions, one from the other. A bargain ceases to be a bargain when it is consummated under duress, he said.

Dr. H. Myers, Dayton Malleable Iron Co., Dayton, O., in developing the theme that the forces which create an organization cannot be bought but must be developed, said the health of the workman is an important asset. Mental discord according to the doctor affects a man's efficiency, fully as much as sickness. He proposed the establishment of a dispensary in every plant, with full or part time service of a physician. He also advocated a loan department, through which workmen might receive financial assistance. He stressed the importance of the foreman as a point of contact between the men and the management and advocated the establishment of foremen training classes in which foremen might be taught the policies and views of the company.

Various cost methods were described by E. T. Runge, E. T. Runge Cost Co., Cleveland. He used a series of blackboards with examples worked out to illustrate the points in his address. He described the fundamental principles on which cost accounting is based and stated there is no ready-made system that may be applied to any plant. Any system installed will have to be modified and adapted to meet operating conditions.

Feasibility of endowing a chair in foundry engineering in the various universities was considered by C. C. Smith, Toledo Steel Casting Co., Toledo, in an address dealing principally with the place of a local organization as a unit of a national organization of the same character. While admitting the acknowledged trend of the foundry industry toward simplification of process and more extended adoption of mechanical equipment, he claimed a need always will exist for competent superintendents and other executives.

At the banquet Thursday evening H. Cole Estep, recently returned from England where he served five years as European manager of the Penton Publishing Co., Cleveland, publisher of IRON TRADE REVIEW and other business papers, summarized impressions touching on the metal industry gained while abroad. He was in accord with the Dawes plan, but he said the sentiment in Great Britain, France, Belgium and Holland is against it. The sentiment is dictated partly by the insular spirit that has maintained boundary lines and separate language and customs over a period of many centuries. It also is dictated partly by economic reasons. To raise funds Germany must export and sell goods and thus come into contact with the trade of the other nations. Business is in a precarious condition, and European nations are opposed to any outside, and to them uncalled for, interference in their affairs.

In the second part of his address Mr. Estep touched briefly on the principal points of an address that was to have been delivered by A. O. Backert, president of the Penton Publishing Co., and which the latter unavoidably was prevented from delivering in person. He stressed the point that the gray iron casting industry has not kept pace with the development of the malleable iron and steel casting industry, and questioned whether this condition was not due to a lack of progressive spirit on the part of gray iron foundrymen. He cited the research work of the American Malleable Cast Iron association and work of a similar character carried on by the Steel Founders Research group.

S. F. Fannon, Sherman Service Inc., talking on the "75-cent dollar in industry" declared that practically 25 per cent of every dollar placed in the pay envelopes of this country is wasted on account of a lack of interest between the owner or executives and the workmen. He presented figures to prove that in an average period of two to three years, the money from any plant paid in wages equals the amount invested in plant and equipment.

That simplified practice is a profit making policy was the statement of R. M. Hudson, chief of the division of simplified practice, United States department of commerce. Profits do not always come from a volume of business at good prices, he said, nor do they always come from low costs. As a rule the successful business is that in which volume is built on quality products, dependable deliveries and fair prices, good materials, modern machinery, up to date methods and good wages. The most practical method to increase profits under present conditions is to prevent waste.

E. S. Carman, chief engineer, Osborn Mfg. Co., Cleveland, described methods of reducing production costs. Comparisons were drawn between castings that were made under haphazard conditions and those made in a plant where every mechanical appliance was provided to increase production and reduce unit cost.

On the evening of Sept. 18 the foundrymen attended a banquet in the ballroom of the Hotel Cleveland. This was followed with a smoker and several acts of vaudeville. Friday morning they visited the research laboratories of the lamp division of the General Electric Co. at Nela Park. At the afternoon session the resignation of Frank Huber, American Rolling Mill Co., Mansfield, O., who has held the office of president for three years was accepted. As a token of recognition of his service, Mr. Huber was presented with a club bag.

Ohio Foundrymen's New Officers

President

Allan A. Nolte, Nolte Brass Fdry. Co., Springfield.

Vice President

Walter Seelbach, Walworth Run Foundry Co., Cleveland.

Treasurer

C. C. Smith, Toledo Steel Casting Co., Toledo.

Secretary-Manager

Arthur J. Tuscany, re-elected, States & Investments Building, Cleveland.

Members Board of Administration

C. C. Smith, Toledo Steel Casting Co., Toledo; Allan A. Nolte, Nolte Brass Foundry Co., Springfield; C. F. Carson, National Supply Co., Toledo; Ed Sands, Superior Gas Engine Co., Springfield; D. McDaniel, Hamilton Foundry & Machine Co., Hamilton.

Review Industrial Electrification

Engineers in Nineteenth Annual Convention in Pittsburgh Discuss Various Applications in Iron and Steel Industry—Exhibition of Equipment Largely Attended—Wide Range in Technical Discussions

APPLICATIONS of electricity industrially with particular reference to iron and steel and allied trades, and various phases of the electrical industry itself were discussed at the technical sessions of the nineteenth annual convention of the Association of Iron and Steel Electrical Engineers, at Duquesne Garden, Pittsburgh, Sept. 15-20. The importance of electrical engineering was portrayed in the exhibition, which comprised practically everything electrical from power machinery such as cranes, hoists, mill motors, electric furnaces, switching equipment, storage battery trucks and tractors, portable electric tools, etc., down to the small supplies such as switch boxes, conduit fittings, automatic reclosing circuit breakers, fuses, friction tape, grease, etc.

Several hundred delegates attended and approximately 25,000 persons witnessed the exhibits during the week. The exhibits were conducted by about 125 manufacturers in approximately 150 booths, erected on the lower floor of the Duquesne Garden.

The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., showed its entire new line of direct current magnetic controllers designed for heavy duty steel mill service. It also demonstrated lightning arresters, showing how discharges of lightning are dissipated. Another exhibitor in a large space was the General Electric Co., Schenectady, N. Y., which showed a full line of its motors and control apparatus. The Cutler Hammer Mfg. Co., Milwaukee, showed for the first time its new reversing full magnetic mill controller of the inductive time limit type. The Alliance Machine Co., Alliance, O., displayed models for its interlocking worm-gear ladle crane control, showing both designs of trolley with motors and drums interlocked, respectively. The Ohio Electric & Controller Co., Cleveland, displayed a magnet controller in operation, while the Otis Elevator Co., New York, devoted its space to the display of devices used in the automatic operation of blast furnaces, skip hoists, etc. The Farrel Foundry & Machine Co., Inc., Buffalo, attracted considerable attention at the show with its No. 1½ gear generator, set up in operation on actual work. The Pittsburgh Electric Furnace Corp. had its half-ton electric furnace on display of the same type which was operated at last year's exhibition at Buffalo, in connection with the model electric foundry.

The annual banquet was the largest ever held by the organization. It was at the William Penn hotel Thursday evening, and approximately 800 attended. This commemorated the thirtieth anniversary of the adoption of electric motors for use in the manufacture of iron and steel. R. S. Shoemaker, American Rolling Mill Co., Middletown, O., retiring president of the organization, presided, and L. H. Burnett, Carnegie Steel Co., Pittsburgh, was toastmaster. Homer D. Williams, president, Carnegie Steel Co., reviewed the period and narrated the important steps taken by the introduction of electricity into steelmaking, recalling the first installations in the Homestead works. A. W. Thompson, president, the Philadelphia Co., Pittsburgh, explained the phenomenal growth of the central power system, asserting that during the past year 71 independent power plants were dismantled, because power from the central system was cheaper. Other speakers were E. J. Buffington, president, Illinois Steel Co., Chicago; Harry P. Davis, vice president, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.; A. C. Cummins, Carnegie Steel Co., Duquesne, Pa., president-elect of the organization; and W. S. Hall, Illinois Steel Co., South Chicago, one of the society's past presidents.

Electrical Engineers' New Officers

President

A. C. Cummins, Carnegie Steel Co., Duquesne, Pa.

First Vice President

George H. Schaeffer, Carpenter Steel Co., Reading, Pa.

Second Vice President

S. S. Wales, Carnegie Steel Co., Pittsburgh.

***Treasurer**

James Farrington, Wheeling Steel Corp., Steubenville, O.

***Secretary**

F. W. Cramer, Bethlehem Steel Corp., Johnstown, Pa.

***Business Manager**

John F. Kelly, Empire building, Pittsburgh.

Directors

W. S. Hall, Illinois Steel Co., South Chicago, Ill.; G. R. McDermott, Illinois Steel Co., South Chicago, Ill.; A. J. Standing, Bethlehem Steel Corp., South Bethlehem, Pa.; C. B. Skelly, American Steel & Wire Co., Cleveland; and J. H. Harrell, Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

*Re-elected.

All of the technical sessions were attended by the several hundred delegates from various sections of the country. At Tuesday's meeting, with John C. Reed, Bethlehem Steel Co., Steelton, Pa., as chairman, two papers were presented. One was by L. A. Umansky of the industrial engineering department, General Electric Co., Schenectady, N. Y., entitled "Adjustable Speed Drives for Rolling Mills." He pointed out that the alternating current drive is more efficient and more reliable than the direct current drive. He said that while in isolated mill drives alternating current is lower in first cost and in maintenance, when several drives drive the same mill, the direct current proposition may have a lower first cost. He cited the various points in favor of the various drive systems and said that nowhere else in steel practice should engineering analysis be given more attention than in connection with adjustable speed drives.

E. G. Bailey, president, Bailey Meter Co., Cleveland, followed with a paper on "Combustion Control." He outlined the various problems confronted by the industry in this connection and the solutions offered by automatic controls. He said: "Automatic control is not justified in all existing boiler plants, but there seems to be no excuse why all controls necessary for the foremen to operate should not be brought to a common point with proper metering equipment and thereby enable him to accomplish the best results without useless physical effort."

Wednesday was designated as Electric Heating Furnace day and was devoted to a number of papers on this subject. George H. Schaeffer, Carpenter Steel Co., Reading, Pa., was in charge. J. A. Seede, General Electric Co., Schenectady, N. Y., in presenting his paper, "Electric Melting Furnaces," referred to recent refinements in furnace design, accessories, and operation, such as the use of electrode economizers, and also told how the capacity of an electric furnace could be increased by preheating. He said that the electric furnace is fast assuming its proper position as a factor of great industrial importance.

E. A. Hurme, manager, steel mill section, Westinghouse Electric & Mfg. Co., East Pittsburgh, stated in his paper, "Medium Low Temperature Applica-

tions," that small hearth type electric furnaces are especially suitable for annealing, hardening carbon steel, normalizing, case and pack hardening, drawing temper of high speed and alloy steels, vitreous enameling and laboratory applications, and by the text of his paper as well as by slide illustrations showed how various manufacturers were adopting the electric furnace in their respective lines of endeavor.

This was followed by the presentation of a large number of views showing varied medium temperature furnace installations which were described by C. F. Cone, engineer, George J. Hagan Co., Pittsburgh. R. S. Sawdey, Van Dorn Iron Works, Cleveland, described the various electric furnace installations in that company's plant.

The viewpoint of the central power station operator was covered in a paper by E. D. Sibley, Metropolitan-Edison Co., Reading, Pa., which gave statistics showing that in this country today there is a connected industrial heating load of approximately 1,250,000 kilowatts which is one-tenth of the total connected power load. Of this amount 1,085,000 kilowatts are connected to central station lines drawing therefrom an annual energy consumption of 2,119,000,000 kilowatt-hours, producing an annual revenue of $40,000,000. Of this connected load, steel mill furnaces account for almost one-fourth and approximately 25 per cent of the annual consumption.

On Thursday, with A. C. Cummins, electrical superintendent, Carnegie Steel Co., Duquesne, Pa., in the chair, a general discussion was entered into with reference to "Developments in Electric Repair Shop Practice," which was participated in by the members present in a lively fashion with the result that the best practice in various shops under stated conditions was brought out.

Walter Greenwood, safety engineer, Ohio works, Carnegie Steel Co., Youngstown, described "Crane-Hoist Travel Limit Devices," as an important method of promoting safety. K. Hussener, president, American Heat Economy Bureau, Inc., Pittsburgh, in his paper, "The Slagging Producer in Steel Works," fully described slagging producers and said that their operation no longer is experimental and that they now require less attention and skill than a blast furnace.

In his paper on "Machine Tools and Other Accessories," John F. Kelly, business manager of the association, as a result of exhaustive research, gave a resume of ancient and modern history of machine tools and their component parts in an effort to show which has the best possible devices for modern practice.

Friday was Central Station day and S. S. Wales, Carnegie Steel Co., Pittsburgh, occupied the chair. Under the joint authorship of Merrill Skinner and F. D. Mahoney, commercial managers, respectively, Duquesne Light Co. and the West Penn Power Co., Pittsburgh, a paper entitled "The Steel Industry and the Electrical Utilities" was presented.

The meeting concluded with a paper by Barton R. Shover, engineer, Pittsburgh, entitled "Power in the Iron and Steel Industry in America" which was an abstract of a paper presented by him at the first world power conference held in London, Eng., June 30 to July 12 of this year. He showed that power is second only in importance to the supply of raw materials for making iron and steel. Mr. Shover foresees the electrification of all power-driven apparatus in iron and steel mills, except blast furnace blowers; the substitution of turbo blowers or possibly gas engines for reciprocating steam blowing engines; the purchase of power requirements by plants which have no waste heat available; the complete economical utilization of waste heat by means of turbo-generators for electric power generation except where this heat can be used to better advantage for "process" or has a market value greater than its coal equivalent; and the interchange of electric power between plants generating power from wast heat and public service companies.

Following were the exhibitors:

Ackurate Rubber Co., New York; Allen Bradley Co., Milwaukee; Alliance Machine Co., Alliance, O.; Allis Chalmers Mfg. Co., Milwaukee; Appleton Electric Co., Chicago; Automatic Reclosing Circuit Breaker, Columbus; American Engineering Co., Philadelphia; Axwell Equipment Co., Pittsburgh.

Baker, R. & L. Co., Cleveland; Bartlett Hayward Co., Baltimore; Benjamin Electric Mfg. Co., Chicago; Bittner, W. A. Co., Pittsburgh; Bussmann Mfg. Co., St. Louis; Bacharach Industrial Instrument Co., Pittsburgh: Box, Alfred & Co., Pittsburgh.

Central Electric Co., Chicago; Chicago Fuse & Mfg Co., Chicago; Chicago Pneumatic Tool Co., Chicago; Corliss Carbon Co., Bradford, Pa.; Crocker Wheeler Co., Ampere, N. J.; Crouse Hinds Co., Syracuse; Cutler Hammer Mfg. Co., Milwaukee; Cutter Co., Philadelphia; Calorizing Co., Pittsburgh.

De Laval Separator Co., New York; De Laval Steam Turbine Co., Trenton, N. J.; Delta Star Electric Co., Chicago; Detrick, M. H. Arch Co., Chicago; Doubleday Hill Electric Co., Pittsburgh; Dravo Doyle Co., Pittsburgh; Duquesne Light Co., Pittsburgh.

Eastman & Graf Co., Pittsburgh; Economy Electric Devices Co., Chicago; Economy Fuse & Mfg. Co., Chicago; Edison Storage Battery Co., East Orange, N. J.; Electric Controller & Mfg. Co, Cleveland; Electric Materials Co., North East Pa.; Electric Service Supplies Co., Philadelphia, Electric Storage Battery Co., Philadelphia; Esterline-Angus Co., Indianapolis, Ind.

Fairbanks Morse Co., Chicago; Farrel Foundry & Machine Co., Inc. Buffalo; Fuller Lehigh Co., Fullerton, Pa.

General Electric Co., Schenectady.

Hayward Co., New York; Herr & Harris Co., Pittsburgh; Hommell, Ludwig, & Co., Pittsburgh; Homestead Valve Mfg. Co., Homestead, Pa.; Hyatt Roller Bearing Co., Harrison, N. J.; Howell Electric Motors Co., Howell, Mich.

Iron City Electric Co., Pittsburgh.

Jacques, Jos., Pittsburgh; Johns-Manville Co., Inc., Chicago; Jones, W. A. Foundry & Machine Co., Chicago.

Keystone Lubricating Co., Philadelphia; H. Kleinhans Co., Pittsburgh.

Lakewood Engineering Co., Cleveland; J. Frank Lanning Co., Pittsburgh; Laughlin & Barney Machinery Co., Pittsburgh.

Maloney Electric Co., St. Louis; Monitor Controller Co., Baltimore; Morgan Engineering Co., Alliance, O.; Mutual Electric & Machine Co., Detroit; Mutual Foundry & Machine Co., Atlanta, Ga.; McCombs Co., W. A. Pittsburgh; McCullough Engineering Co., C. H. Pittsburgh.

National Carbon Co., Cleveland; National Electric Mfg. Co., Pittsburgh; New Departure Mfg. Co., Bristol, Conn.; Nichols-Lintern Co., Cleveland; Norma Co. of America, Long Island City.

Ohio Electric & Controller Co., Cleveland; Okonite Wire & Cable Co., Passaic, N. J.; Otis Elevator Co., New York.

Packard Electric Co., Warren, O.; Pawling & Harnischfeger Co., Milwaukee; Payne-Dean, Ltd., Stamford, Conn.; Pittsburgh Electric Furnace Corp., Pittsburgh; Pittsburgh Transformer Co., Pittsburgh; Pyle National Co., Chicago; Pittsburgh Electrical & Mach. Works, Pittsburgh.

Reed Air Filter Co., Louisville, Ky.; Railway & Industrial Engineering Co., Greensburg, Pa., Republic Flow Meter Co., Chicago; Reynolds, H. Lee, Co., Pittsburgh; Robinson Ventilating Co., Pittsburgh; Rolling Bearing Co., Inc., Syracuse; Rutherford & Uptegraff, Pittsburgh; Reliance Electric & Engineering Co., Cleveland; Rowan Controller Co., Baltimore.

Sangoms Electric Co., Springfield, Ill.; Sharples Specialty Co., Philadelphia; Signal Engineering & Mfg. Co., New York; Shepard Electric Crane & Hoist Co., Montour Falls, N. Y.; Square D. Co., Detroit; SKF Industries, Inc., New York; Standard Underground Cable Co., Pittsburgh; Stroh Steel Hardening Process Co., Pittsburgh; States Co., Hartford, Conn.; Sundh Electric Co., Newark, N. J.; Superheater Co., New York; Swindell, Wm. & Bros., Pittsburgh.

Taplet Mfg. Co., Philadelphia; Thermoid Rubber Co., Trenton, N. J.; Thomas Flexible Coupling Co., Warren, Pa.; Tool Steel Gear & Pinion Co., Cincinnati; Trumbull Electric Mfg. Co., Plainville, Conn.; Thompson Electric Co., Cleveland.

Union Electric Co., Pittsburgh; Union Electric Mfg. Co., Milwaukee; U. S. Graphite Co., Saginaw, Mich.

V. V. Fittings Co., Philadelphia; Vulcan Soot Cleaner Co., Du Bois, Pa.

Wagner Electric Corp., St. Louis, Mo.; Western Electric Co., Chicago; Western Electric Instrument Co., Chicago; Westinghouse Electric & Mfg. Co., E. Pittsburgh; Westinghouse Lamp Co., New York; West Penn Power Co., Pittsburgh; Wiegand, Edwin L., Co., Pittsburgh; Wilmington Fibre Specialty Co., Wilmington, Del.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

CARL C. JOYS, recently has been appointed manager of sales of the Smithsteel Coupling & Oil Field Products division of the A. O. Smith Corp., Milwaukee, manufacturer of pressed steel products. He had been associated with the oil and steel industries for 15 years, since graduating from the University of Wisconsin in 1909. He entered the employ of the Honolulu Consolidated Oil Co., in California, and in 1919 became district sales manager in New York in charge of eastern territory and export business for the Steel & Tube Co. of America. He was elected vice president and director of sales of the Lucey Mfg. Co. in 1923, which he left shortly afterwards.

Carl Hochenauer, former sales manager of the Smith corporation, now becomes district sales manager of the Oil Field division with headquarters in the Thomas building, Dallas, Tex. E. A. Butts will be in charge of the office at Tulsa, Okla.

* * *

Rushmore B. Heed has been appointed vice president and general sales manager of the Garford Truck Co., Lima, O.

* * *

Stanley Cooper has been made general advertising manager of the Fafnir Bearing Co., New Britain, Conn.

* * *

E. G. Grace, president of Bethlehem Steel Co., Bethlehem, Pa., recently was elected president of the trustees of Lehigh university, Lehigh, Pa.

* * *

R. C. Carter, recently elected president of the Latrobe Tool Co., Latrobe, Pa., formerly was with the Whitman & Barnes Mfg. Co., Akron, O.

* * *

Louis W. Byrne, recently appointed general manager of the Delahunty Dyeing Machine Co., Pittston, Pa., formerly was with Wilmarth & Morman Co., Grand Rapids, Mich.

* * *

J. L. Adams has been placed in charge of the recently opened sales office at 1020 Union Trust building, Cincinnati, O., of the Pittsburgh Rivet Co., Pittsburgh.

* * *

Fred R. Shore, Industrial Plants Corp., 25 Church steret, New York, will leave for Mexico about Oct. 2, for a 60-day business trip. His address will be in care of the American consulates at Tampico and Mexico City.

* * *

Edgar C. Bain, recently connected with the United Carbide & Carbon Research Laboratories, Long Island City, N. Y., formerly was metallurgist and physicist for the Atlas Steel Corp., Dunkirk, N. Y.

* * *

B. N. Broido, recently appointed chief engineer of the industrial department of the Superheater Co., 17 East Forty-second street, New York, has been doing special consulting work for that company in New York and Chicago.

* * *

G. R. Horne has been appointed district sales manager of the magnet department of the Ohio Electric & Controller Co., Cleveland, manufacturer of lifting magnets and small motors, with his headquarters at 2158 Penobscot building, Detroit.

* * *

Morris Hobbs, formerly associated with Mills, Rhine, Bellman & Nordhoff, Toledo, O., architects, and previously with Frank D. Chase, Inc., Chicago, has become a member of the firm of Gerow, Conklin & Hobbs, Spitzer building, Toledo.

* * *

Col. R. A. Mitchell, vice president of the Alabama Power Co., has been elected president of the Anniston Electric Steel Corp., Anniston, Ala. He succeeds W. S. Hotchkiss as president, the latter having retired. James Hugher is manager of the Anniston Electric corporation.

* * *

Fred C. A. H. Lantsberry, managing director of William Jessop & Sons, Ltd., Sheffield, England, arrived in New York Sept. 17 for a stay of about six weeks in this country. Mr. Lantsberry expects to visit various cities during his stay. The American headquarters of William Jessop & Sons, Ltd., are at 91 John street, New York.

* * *

Carl C. Crawford of Cleveland has been appointed to succeed W. H. Davis, lately resigned, as superintendent of the Sabraton plant of the American Sheet & Tin Plate Co, Morgantown, W. Va. Mr. Davis will retire from the company's service after 46 years' activity in the tin plate industry. He is president of the Commercial bank and is active in local business and community affairs, and he plans to remain in Morgantown. Mr. Crawford formerly was connected with the Sabraton plant, having been transferred from it to executive positions in the company's plants at Gary, Ind.; New Kensington, Pa., and Cleveland.

* * *

J. C. Shepherd has been appointed assistant general manager of sales for the Kansas City Bolt & Nut Co., Sheffield Steel mills, Kansas City, Mo., to assist Ernest Baxter, general sales manager of those mills.

J. W. Anderson also has been appointed assistant general manager of sales for the Sheffield Steel mills of the Kansas City company. He will assist Mr. Baxter also.

* * *

E. A. Muller, of the King Machine Tool Co., Cincinnati, has been appointed chairman of the committee on industrial relations of the National Metal Trades association. The committee now consists of himself, W. W. Coleman, Bueyrus Co., South Milwaukee, Wis.; J. D. Cox, Cleveland Twist Drill Co., Cleveland; and R. E. Newcomb, Worthirgton Pump & Machinery Co., Holyoke, Mass.

* * *

Evan F. Jones has been appointed manager of the Atlas Die Casting Corp., Worcester, Mass. Mr. Jones is widely known as a manufacturer. He held the position as general manager of the Clinton Wright Wire Co. before the Wickwire merger, and has since been an executive in the Morgan Spring Works. The Atlas Die Casting Co. was formed in April 1921. Edwin G. Norman is president and Alexander B. Campbell treasurer.

* * *

George D. Branston, effective Sept. 15, has been placed in charge of the newly formed department to handle all railway sales for the Jones & Laughlin Steel Corp., Pittsburgh. This department will handle not only sales to railways of spikes, tie plates, etc., but of steel products and materials to car and locomotive builders. Mr. Branston became identified with the Jones & Laughlin Steel Corp. about a month ago, having had considerable experience in the matter of sales of railway material.

Metal Index Stationary; Farm Products Up

Washington, Sept. 23.—Weighted index numbers of the United States department of labor, which include 404 commodities or price series, show no change in the metals and metal producers group in August as compared with the preceding month, although an upward movement in general wholesale prices is indicated by the survey. The general index number advanced to 149.7 for August, as compared with 147 for July and 150.1 for August last year. The metals and metal products index remains unchanged at 130.4

Large increase in farm products and foods again were responsible chiefly for the rise in the general price level. Comparing prices in August with those of a year ago, as measured by changes in the index numbers, it is seen that the general level has declined slightly. Considerable decreases took place in the groups of fuel and lighting materials with changes also in building materials and house furnishing goods, while smaller decreases are shown for cloths and clothing and miscellaneous commodities. Farm products, foods and chemicals and drugs averaged higher than in August, 1923.

To Discuss Wrench Sizes

Manufacturers of drop forged wrenches, together with representatives of the division of simplified practice of the department of commerce and of the American Hardware Manufacturers' association, will meet in New York Friday, Sept. 26, to consider simplification of varieties in drop forged wrenches.

Some opinion has been expressed among manufacturers of drop forged wrenches that an excessive variety exists in this commodity and that production would be aided by weeding out sizes and varieties that are less seldom sought and that move more slowly.

Takes Over Control

J. T. Duryea, president of the Pierce, Butler & Pierce Mfg. Corp., New York, has obtained from Levi S. Chapman and Irving N. Beeler of Syracuse, N. Y., the control of the corporation. Mr. Chapman, it is reported, received $1,180,000 for his holdings, together with a number of small lots of stock. Mr. Beeler's stock interest has been increased, but Mr. Duryea, through the ownership of 30,000 shares of common stock, holds a majority control. Plants in Syracuse, Eastwood and Oswego, N. Y., Huntington, Pa., Zanesville, O., produce cast iron boilers and radiators for hot water heating, pressure gages and thermometers, high speed engines and plumbing fixtures and plumbing materials. Jobbing houses are located in 13 cities.

Plan Mexican Railroad

Washington, Sept. 23.—Another railroad project is to be undertaken in Mexico, with the granting of a concession for the building of a railroad from Tampico north through the state of Tamaulipas, opposite Rio Grande City, Tex., the United States department of commerce is informed by Consul H. L. Walsh, at Nuevo Laredo.

Automatic Signal & Sign Co., Chicago, has increased its capital stock from $35,000 to $100,000.

Obituaries

GEORGE T. LEWIS, aged 75, of Sharpsburg, Pa., president and general manager of the Penn Iron & Steel Co., Creighton, Pa., and a pioneer in American iron industry, died Sept. 17 in West Penn hospital, Pittsburgh, from pneumonia. Mr. Lewis was born in Sharpsburg and was educated in public schools there. When 15 years old, he took a position in his father's mill, the old Lewis-Dalzell Iron Co. For many years prior to the world war he was vice president of the Carter Iron Works but resigned that position to assume the presidency of the Penn Iron & Steel Co., seven years ago. He was active in the iron industry until his death.

Mr. Lewis was a grandson of George Lewis, who in 1814 came from Penydarren at Merthy Tydvil, Glamorganshire, South Wales, and at Plumstock, now called Middletown, built the first rolling mill in America, as well as rolling the first bar of iron. George T. Lewis was born in Sharpsburg, the son of L. W. Lewis of Lewis, Dalzell & Co. and the Vesuvius Iron & Nail Works. George T. Lewis was at one time superintendent and general manager of the Vesuvius Iron & Nail Works.

* * *

J. D. Cubbage, general foreman of the blast furnace department of Republic Iron & Steel Co., Youngstown, died at the age of 61 years, Sept. 13. Mr. Cubbage was one of the pioneer blast furnace men in the Pittsburgh district and before coming to the Republic company 11 years ago was general foreman of the Carrie and Duquesne furnaces of the Carnegie Steel Co.

* * *

Gilmer Clapp, president of the American Pneumatic Service Co. killed himself Wednesday of last week at his residence at Hotel Braemore, Boston. Mr. Clapp was connected in various capacities with the American Trust Co., the Ames Shovel & Tool Co., the Boston Pneumatic Transit Co., the Calaveras Copper Co., the Chicago Postal Pneumatic Service Co., the Lamson Co., New York Mail & Newspaper Tansportation Co., New York Pneumatic Service Co., Union Copper Mining Co., and others.

* * *

W. H. Picher, aged 73, one of the founders of the Picher Lead Co., St. Louis, and pioneer citizen of Joplin, Mo., died Sept. 15 at St. Louis, of heart disease. With his brother, Oliver H. Picher, he founded the Picher company, which took over the White Lead works, later merging with the Eagle Paint Co. of Cincinnati, becoming the Eagle-Picher Lead Co.

Mr. Picher was born at Springfield, Mo., in 1841, and moved with his family to Carthage in 1868, later going to the western part of the county with the development of mining.

H. W. Collart

Houghton W. Collart, manager of the advertising copy and art service department of the Penton Publishing Co., Cleveland, died Sept. 18 at Lakewood hospital, that city, after several weeks' illness, aged 41 years. He had been in the service of the Penton company for 17 years and was widely known as one of the most successful and skillful advertising art service men in the country. He was chairman of the committee which prepared and published the "Handbook for Business Paper Advertisers" for the Associated Business Papers, Inc., which is regarded as the standard authority. Mr. Collart enjoyed a high regard among a wide and discriminating circle of industrial executives, advertising managers and advertising agents because of his keenness of perception, his sound judgment and fine sense of artistic quality which gave individuality and distinction to his work.

Make More Brick

Production and Shipment of Refractories Increase During August

Pittsburgh, Sept. 23.—With production of fire clay brick on a 60 per cent basis and silica brick on a 45 per cent basis for August, 3 per cent more brick in both grades was made than in July. This is shown in figures issued by the Refractories Manufacturers' association. Shipments of fire clay brick were 61 per cent, an increase of 3,030,171 brick, while silica brick shipments at 53 per cent of capacity reporting gained 542,544 brick. Net new business in both grades also showed gains, fire clay going from 29,002,787 brick in July to 30,731,547 in August, or to 59 per cent of capacity reporting. Silica brick net new business increased by 438,888 brick, or to 37 per cent of capacity reporting. The following comparative table gives further details:

FIRE CLAY BRICK

	Aug., 1924	July, 1924
Capacity reporting	51,948,967	50,698,967
On hand last day preceding month	151,230,634	146,507,019
Production	31,508,420	29,137,095
Shipments	31,723,597	28,693,426
On hand last day current month	151,015,457	146,950,688
New orders received during month	31,481,802	29,428,844
Cancellations	750,255	426,057
Net new business	30,731,547	29,002,787
Unfilled orders last day current month	41,128,726	41,787,145

SILICA BRICK

	Aug., 1924	July, 1924
Capacity reporting	8,019,667	8,019,667
On hand last day preceding month	12,389,600	12,731,715
Production	3,623,046	3,393,791
Shipments	4,278,450	3,735,906
On hand last day current month	11,734,196	12,389,600
New orders received during month	3,100,739	2,594,908
Cancellations	111,721	44,778
Net new business	2,989,018	2,550,130
Unfilled orders last day current month	4,144,445	5,433,857

The seemingly great difference between stocks on hand, and unfilled orders on books August 31 is explained by the fact that large quantities of shapes are made up in advance of the receipt of actual orders. These are in no sense 'free stock" and could not be applied upon new orders. The actual free stock of 9-inch equivalents on Aug. 31 in fire clay was 64,205,596, while in silica brick the stock available for sale amounted to 2,954,522 brick.

Launch Great Dredge

Pittsburgh, Sept. 23.—The second largest sand and gravel dredge in inland waters slid into the Ohio river Sept. 18 from the marine ways of the Dravo Contracting Co. on Neville Island, near Pittsburgh. The craft was built for the Ohio River Sand Co., Louisville, Ky. Mrs. T. J. Duffy, wife of the president of that company, performed the christening ceremony. Following the launching, lunch was served in a pavilion on the grounds to more than 100 guests. The dredge is of all-steel construction and is steam driven. It has a capacity of 500 tons an hour and will dig to a depth of 50 feet. It is 155 feet long, 44 feet wide and 8 feet deep. Four months were required for completion to the launching stage and another month will elapse before it is ready to be towed to Louisville where it will operate in the Ohio river.

New Ovens Ordered

Twenty-five Roberts-Morrisey type by-product coke ovens are to be installed at the Chester, Pa., plant of the Philadelphia Suburban Gas & Electric Co. by the American Coke & Chemical Contracting Co., 208 South LaSalle street, Chicago. The old battery of ovens at Chester is now being removed. High gas yield is sought in the Roberts-Morrisey ovens, which are of the regenerative type. The present Roberts ovens at the plant of the St. Louis Coke & Iron Co., St. Louis, are of the recuperative type.

August Shipments Increase

Washington, Sept. 23.—Shipments of steel furniture stock goods in August, based on reports received by the department of commerce from 22 manufacturers, amounted to a value of $1,184,611, as against $1,115,792 in July and $1,345,147 in August last year. Shipments had been falling off steadily each month since the first of the year but the August figures indicate an increase.

	1922	1923	1924
January	$983,834	$1,362,470	$1,592,338
February	967,125	1,307,173	1,605,409
March	1,087,228	1,709,206	1,661,303
April	1,058,382	1,520,286	1,658,610
May	1,056,735	1,506,072	1,505,367
June	1,015,463	1,401,950	1,270,615
July	945,768	1,247,605	1,115,792
August	943,087	1,345,147	1,184,611
September	1,062,495	1,273,259	.....
October	1,227,447	1,365,600	.....
November	1,204,310	1,339,425	.....
December	1,376,152	1,455,836	.....

Midland Steel Reports Net

The first annual report of the Midland Steel Products Co., organized early last year by the consolidation of the Detroit Pressed Steel Co. and the Parish & Bingham Corp., shows gross earnings of approximately $16,000,000. Net earnings for the 12 months ended May 31, 1924 were $1,600,000. The company's balance sheet shows current assets of $4,880,102 and current liabilities of $1,126,575, the latter including $588,000 reserved for dividends. The net working capital amounted to $3,753,527.

Evan Heat Electric Co., Detroit, has increased its capital stock from $10,000 to $100,000.

Canadian Lines Contract for Branch Roads

Toronto, Ont., Sept. 22.—The Canadian National railways have let contracts for four of the branch lines authorized at the recent session of parliament. J. G. Hargraves & Co., have been awarded the contract for the grading of 50 miles to be known as the West Loverna branch starting from Loverna, Ottawa, and also the contract for the grading, bridging and culverts of a 2-mile branch at Peebles, South Sask. Two tracks will be laid this year.

The contract for the building of the Dunblane Southeastern branch in Saskatchewan, 40 miles in length, has been awarded to Dutton Mannit & Wilstrand of Winnipeg. Fourteen miles of grading and track laying will be done this year and the balance next season.

The building of the Hanna-Warden line, which will shorten the route to the Alberta coal mines, has been awarded to Boyds Ltd., and A. C. Bryson & Son, Winnipeg.

Operations at the Sydney plants of the British Empire Steel Corp. are gradually being resumed. The bar and rod mills have gone into operation.

The Eugene Phillips Co., Brockville Ont., will in a few days begin the manufacture of copper wire. Shipments of 88 tons of copper wire bars have been made to the plant by the Consolidated Mining & Smelting Co. of Trail, B. C. This will be the first copper wire made from Canadian copper.

Vulcan Earnings Drop

The Vulcan Detinning Co. reports gross sales of $480,307 in the second quarter, against $573,339 a year ago, and total income of $54,998, against $73,944. After reserves for taxes and other deductions, net income is $47,731, against $62,640. The net income equals $1.97 a share on the $2,419,400 preferred and class A preferred stock outstanding, against $2.57 in the same quarter last year. After preferred dividends, the company reports a $9,608 deficit, against a surplus of $19,901 a year ago.

To Place Large Order

Washington, Sept. 22.—Cable reports to the United States department of commerce state that a large order for steel is expected to be placed by the Chilean state railways within a short time. Iron and steel sales fell off in Chile during August.

Stewart Hardware Mfg. Co., Detroit, has increased its capitalization from $20,000 to $40,000.

Sheet Sales Output and Shipments Increase

Sales, production and shipments of sheets reported by the National Association of Sheet and Tin Plate Manufacturers registered further increases for August, following the upturn in July. Sales totaled 207,986 tons as against 135,998 tons in July. Production mounted to 190,436 tons from 144,291 tons in July. Shipments increased to 177,498 tons from 151,255 tons. There was an increased in unfilled tonnage as of Sept. 1 compared with Aug. 1; from 203,440 tons to 236,614 tons. The following gives the comparisons, with the percentages of capacity to which the figures relate:

	Sales	Production	Shipments
July	135,998	144,291	151,255
June	108,693	114,807	141,176
May	126,487	176,582	196,254
April	182,903	234,000	235,967
March	251,411	278,767	262,497
February	189,081	275,118	249,859
January, 1924	234,858	274,097	228,660
December	349,446	155,229	188,600
November	165,491	188,144	199,836
October	185,110	225,714	230,820
September	223,556	185,577	205,772
August	116,659	234,112	234,486
July	92,358	174,910	192,261
June	172,637	218,432	233,128
May	242,624	260,006	278,059
August	207,986	190,436	177,498

The total number of hot mills in the United States is 686, having capacity for August of approximately 401,700 tons, and the percentage of that capacity to which the August figures are related is 72.7 per cent. Following is a comparison of sales, production and shipments by months since April, 1923:

	Net tons July, 1924	Per cent of capacity	Net tons Aug., 1924	Per cent of capacity
Sales	135,998	45.9	207,986	71.2
Production	144,291	48.7	190,436	65.2
Shipments	151,255	51.0	177,498	60.7
Aug. 1 and Sept. 1	203,440	68.7	236,614	81.0
Stock awaiting shipment first of following month	70,798	23.9	70,094	24.0
In stock unsold first of following month	39,621	13.4	42,635	14.6

Small Inventories May Speed Up Revival

Washington, Sept. 23.—Inventories in manufacturing industries are small, says Secretary of Commerce Hoover, and the situation may result in a sudden recovery of general business activity. Secretary Hoover says the recent recessions of business have been largely psychological due to the foresight of business men in curbing dangerous tendencies toward inflation and their desire to cut inventories. According to Secretary Hoover, the steel industry is giving attention to the lowering of operating costs due to possible competition from Europe.

According to the department of labor, August payroll totals increased 11 per cent over July. Employment in general manufacturing fields in August showed an increase for the first time since March. A small decrease in employment appeared in the machine tool industry.

Sheet Mill Wages Lowered for September-October

Wages paid in mills represented by the Western Sheet & Tin Plate Manufacturers association in September and October will be 3 per cent lower than in July and August. The average sales price of 26, 27 and 28 gage black sheets in July and August was 3.50 cents compared with 3.60 cents in June and July. Tin and sheet mill wages in September and October will be 40½ per cent above base. A comparison of price averages, governing wages for the periods designated follows:

Sept.-Oct.	3.50c	— 3 per cent
July-August	3.60c	— 3 per cent
May-June	3.70c	— 1½ per cent
March-April	3.75c	unchanged
January-February, 1924	3.75c	unchanged
November-December	3.75c	+ 1½ per cent
September-October	3.70c	+ 3 per cent
July-August	3.60c	+ 6 per cent
May-June	3.40c	+ 3 per cent
March-April	3.30c	unchanged
January-February, 1923	3.30c	+ 3 per cent
November-December	3.20c	+ 4½ per cent
September-October	3.05c	+ 4½ per cent
July-August	2.90c	+ 3 per cent
May-June	2.80c	unchanged
March-April	2.80c	unchanged
January-February, 1922	2.80c	+ 1½ per cent
November-December	2.75c	—10½ per cent
September-October	3.10c	—15 per cent
July-August	3.85c	— 3 per cent
May-June	3.95c	—10½ per cent
March-April	4.30c	—25½ per cent
January-February, 1921	5.15c	—19½ per cent

Pares Appropriations for Commerce Work

Washington, Sept. 23.—Proposed increases in appropriations for the department of commerce for the fiscal year ending June 30, 1926, have been rejected by Director of the Budget H. M. Lord, who has ordered that the appropriations be reduced materially. He has fixed $230,000 as the maximum increase over current appropriations. The department officials may allot this amount among the bureaus and divisions as they desire.

A total increase of about $2,000,000 was requested. Of this about $700,000 was for the bureau of foreign and domestic commerce. The current appropriations for the bureau amount to about $2,800,000. It is said an attempt will be made to obtain a reconsiderations of Director Lord's ruling.

Seek Simplification of Warehouse Documents

Washington, Sept. 23.—In an effort to simplify the endless variety of printed forms and to act on uniform documents for the warehouse industry, which have been prepared after nearly two years' study by a special committee of the American Warehousemen's association, headed by A. H. Greeley, of Cleveland, the simplified practice division of the department of commerce is preparing to hold a national conference on Sept. 24. Manufacturing and distributing groups, including iron and steel organizations, other trade associations, railroad and transportation bodies, banking organizations and the public warehouse industry have been invited by Kay M. Hudson, chief of the division of simplified practice.

Present diversity in such forms is a direct cause of confusion, lost time and errors, it is claimed. The Sept. 24 conference has the backing of a number of industrial and commercial groups. It is pointed out by Mr. Hudson that warehousing rapidly is being recognized as an important link in the chain of distribution and that considerable improvement can be made in the service rendered by this industry by greater uniformity. Among those invited to the conference were the following:

American Hardware Manufacturers' association; American Iron, Steel and Heavy Hardware association; American Staple Manufacturers' association; American Supply and Machinery Manufacturers' association; American Tack Manufacturers; Electric Hosit Manu-Trade Association Executives; Associated Manufacturers of Electrical Supplies; Association of Lock Washer Manufactures; Electric Hoist Manufacturers' association; Foundry Supply Manufacturers' association; Electrical Manufacturers' council; National Association of Manufacturers; National Association of Purchasing Agents; Motor Truck Association of America; and Motor Accessories Manufacturers' association, all of New York.

American Railway association; Automobile Manufacturers' association; National Association of Brass Manufacturers; and Page Fence and Wire Products association, of Chicago.

Drop Forge Supply association; National Hardware Association of the United States; and National Supply and Machinery Dealers' association of Philadelphia.

American Shovel institute; Association of Tin Plate Manufacturers; Enamel Sanitary Ware Manufacturers; ssocition National Assoctiation of Sheet and Tin Plate Manufacturers; National Pipe and Supplies association; and Railway Supply Manufacturers' association of Pittsburgh; Conyevors' Conveyor Manufacturers' association, Providence, R. I.; New England Iron and Hardware association Boston; American Pig Iron association; Foundry Equipment Manufacturers' association; and National Association of Steel Furniture Manufacturers, Cleveland; National Association of Iron and Bronze Manufacturers; and National Machine Tool Builders' association, of Cincinnati.

Machine Tool Inquiry Heavier

Sales Continue To Drag in Most Centers—Return of Large Buyers to Market Strengthens Pittsburgh District—Railroad Activity Generally Lacking—Crane Awards More Numerous and Market Stronger—Used Equipment Buying Still Dull

INQUIRY generally is stronger in the machine tool market. Most districts report an increased number of prospective sales, but in few centers are these reflecting heavier sales. Anticipation of better business within the next few months is an encouraging factor in the market, but many machine tool interests now refuse to be enthused over future prospects, having seen the date of recovery continually advanced. The return of such buyers as the Western Electric Co., New York Central railroad, General Electric Co., and other large interests is stimulating hesitant buyers. Although a few railroads are in the market, business from that source is small. The Chesapeake & Ohio has taken bids on a large list; the Pennsylvania is picking up an occasional tool; Santa Fe has placed orders for several vertical boring mills; Southern railroad will soon have its new shops in operation, and the New York Central is expected to buy for its shops at West Albany, Depew and Avon, N. Y. Prospects are for better than current business from the railroads. Industrial buyers include the Universal Portland Cement Co., Universal, Pa., and the Carnegie Steel Co., both having distributed fair orders during the past week. Nash Motors Co. has been a steady buyer of machinery for its new plant at Racine, Wis. Standard Sanitary Mfg. Co. continues its purchases for a plant at Baltimore. A new automobile accessory manufacturer in Michigan is in the market for a large list.

Used equipment sales continue small, with price competition failing to stimulate the buyer's interest. Auctions throughout the country continue to hamper used tool business. Most current sales are of small tools, with larger machines being cleared only occasionally.

Crane activity took a sudden spurt last week with the award of nine small hoists by the Carnegie Steel Co., and various other orders. A Cleveland manufacturer is in the market for 40 1-ton and two 3-ton hoists. Pending business is large but there is little tendency as yet on the part of buyers to close on their requirements.

Several Large Industrial Buyers Active

NEW YORK, Sept. 23.—Machinery buying again is confined to scattered orders. A relatively good amount of railroad inquiry actively is pending and sellers generally are confident that September will show an improvement over the preceding month. Sellers are keeping in close communication with the Western Electric Co., in anticipation of the early issuance of a list for its Kearny, N. J. plant, and at the same time are expecting the New York Central to come into the market soon for a substantial list for its shops at West Albany, Depew and Avon, N. Y.

The General Electric Co., Schenectady, N. Y., has come into the market for three tool room lathes for its plant at Pittsfield, Mass. This is the first inquiry noted as issued by this company in two or three weeks. The lathes are to be of 16, 18 and 22 inches. The Pennsylvania railroad is inquiring for a 36-inch crank planer for its shop at Westville, O. The Santa Fe has closed on a locomotive journal turning lathe. No atcion has yet been taken on the lists recently noted as issued by several of the eastern railroads.

The Southern railroad expects to place its new shops at Birmingham, Ala., in operation Oct. 1 virtually all equipment now having been installed. The opening will be marked by the attendance of the president and other high officials of the road and also representatives of several machine tool companies.

Miscellaneous buying includes two axle lathes for the Bethlehem Steel Co., and a car wheel borer for the Forged Steel Wheel Co., Pittsburgh. Crane buying is decidedly dull with September thus far one of the least active periods noted this year.

Much Inquiry, Few Sales

BOSTON, Sept. 23.—Interest in the machine tool market is mounting rapidly in New England in view of the large exhibit at Boston this week and the successful exhibit held at New Haven, Conn., last week. Manufacturers at the New Haven exhibit reported more sales from the convention floor this year than in 1923. One prominent exhibitor reported eight positive sales of a special machine which was on exhibit. Aside from the convention sales there has been no activity in the new tool market throughout the district. Boston dealers report the usual run of scattered used tool orders, but the Boston sales of new machine tools have been almost negligible. Some movement of equipment a little out of the direct line of machine tools is reported. Several sizeable contracts for road working machinery have been closed. Power plant equipment placed with a Rhode Island manufacturer includes a crane, motors, blowers and tractors. A Massachusetts boiler manufacturer bought a plate cutter and a riveter. The exhibit of tools in connection with the steel treaters convention is in full swing and inquiry is reported exceptionally active.

Large Tool Sales Few

CHICAGO, Sept. 23.—Fair business, chiefly in single tools, has been done by most Chicago machinery dealers in the past week. Demand for used equipment practically equals inquiry for new. The outstanding business before the Chicago machinery market—that of the remainder of the school board list—continues to hang fire.

The Nash Motors Co. has been a steady buyer of special machinery for its new Ajax plant at Racine, Wis., it is moving from Milwaukee much of the equipment formerly used in the manufacture of the Lafayette car, and is reserving the buying of standard tools for Racine until a later date. The Russakov Can Co., Chicago, has placed three presses.

The Santa Fe railroad has placed several vertical boring mills with west-coast dealers. A Wisconsin manufacturer has ordered four heavy duty polishing lathes in this market. A fair-sized list, including eight presses, will be bought by a new automobile accessory manufacturer in a western Michigan city. A Chicago house has placed a horizontal boring and drilling machine

with a Michigan buyer. Individual sales in Chicago have included two tamping machines, a turret lathe, a centerless grinder and a small press and a screw machine.

Market Quietness Continues

CINCINNATI, Sept. 23.—Characterized by a fair amount of buying and inquiries the machine tool market is quiet. The R. K. LeBlond Machine Tool Co., is reported to have received a large order for printing and paper folding machinery, which will necessitate the steady operation of the company's plant for the remainder of this year. The company has been making special machines of this and other kinds for sometime. The Cincinnati Planer Co., received an order for a 20 x 48-foot planer from the Bethlehem Shipping Corp. Manufacturers are of the opinion that within the next two weeks purchases will start on the inquiries of several railroads which have been pending for some time. The Standard Sanitary Mfg. Co. continues to make purchases for its new plant at Baltimore.

Conditions appear practically unchanged in the used machinery market with business hampered by the many auctions that continue to be held throughout the country.

Larger Buyers Again Active

PITTSBURGH, Sept. 23.—Sales of machine tools have been more numerous this past week in both the new and used machinery market. Sellers accordingly are more encouraged than they have been for some time past and a few believe that good business is assured for the fall and winter, as gauged by inquiries received and promised. Featured are the purchases by the Universal Portland Cement Co., Universal, Pa., and the Carnegie Steel Co., Homestead, Pa. Both buyers distributed orders among several dealers. On the Carnegie account the Brown & Zortman Machinery Co. sold a keyseater milling machine; Somers, Fitler & Todd sold saws, boring bar, lathe, turret lathe, etc.; the Motch & Merryweather Machinery Co., a 24-inch lathe and William K. Stamets, several other items. It is understood that a horizontal boring mill, two 6-foot radials, some heavy duty lathes, and a large planer are to be purchased this week. In addition to some tinsmith tools, the Universal Portland Cement Co. placed orders for three large machines with Manning, Maxwell & Moore, Inc.; a horizontal boring mill, lathe, etc., with the Brown & Zortman Machinery Co.

Chesapeake & Ohio railroad opened bids Sept. 18 on its large list issued a week or two ago for various shops but orders have not come through as yet. The National Tube Co., is understood to be collecting machines at its Gary, Ind., plant from other points to which they were shipped but probably will buy more when its needs have been properly lined up. It also is negotiating for five cranes for this point. Carnegie Steel Co. bought seven 1-ton floor controlled and two 3-ton cage-controlled hoists for Homestead.

An interesting inquiry before hoist builders now is that of a Cleveland manufacturer for 40 one-ton, and two 3-ton hoists. Other crane business is dull although numerous projects are pending before sellers. Crane manufacturers' representatives report that a large number of tentative inquiries were developed by them at the exhibition of equipment held last week at Duquesne Garden, Pittsburgh, in conjunction with the nineteenth annual convention of the Association of Iron and Steel Electrical Engineers. Crane builders showing exhibits included the Alliance Machine Co., Morgan Engineering Co., Pawling & Harnischfeger Co., and the Shepard Electric Crane & Hoist Co.

Demand Generally Better

CLEVELAND, Sept. 23.—Demand for machine tools generally is better, with inquiries reported more numerous by most dealers. Sales have not increased in proportion. One dealer reports a smaller number of inquiries but heavier sales, an unusual case in the present market. This interest recently has closed out a 42-inch lathe to a user in Montreal, Que.; a boring mill to an Indianapolis company; eight tools to an interest in northern Ohio, including radial drill, milling machine, lathe, etc.; and several other large tools. Some of this equipment was used. Demand is reported better by some manufacturers, but the increase is not general. One machine tool manufacturer in this district recently closed on six large tools to a western railroad. Industrial demand from the manufacturers in the Cleveland district is limited to purchase of a few small tools. Most of the sales booked by local interests are coming from outside.

Tendency on the part of many buyers to inquire for machines and then postpone purchase until resumption of to a western railroad. Other railroad business is lacking in this territory, few large tools being purchased. Inmore normal business, gradually is becoming less of a hindrance.

Used tool demand is showing little improvement. One dealer sold a 100-ton knuckle joint press in Chicago recently, but few sales of such large machines are noted. Small drills and lathes, with miscellaneous other machine shop equipment are moving.

Crane Awards and Inquiries of the Week

Orders Placed

Eleven cranes and a monorail hoist for the Westinghouse Airbrake Co., Wilmerding, Pa., as noted last week to the Shaw Electric Crane Works, Muskegon, Mich., including six 3-ton wall cranes, two 5-ton overhead cranes with 51-foot, 1½-inch span, and one each 5-ton with 37-foot span, 5-ton with 33-foot span, and 3-ton with 33-foot span.

Nine hoists for the Carnegie Steel Co., Homestead, Pa., to the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., including seven 1-ton and two 3-ton, cage-operated.

Single Installations

20-ton locomotive crane for the Hunlock Creek, Pa. plant of the Luzerne Light & Power Co., placed through Stone & Webster, Boston, consulting engineers, with the Browning Co.

10-ton ore bridge for the Carrie furnaces, Rankin, Pa., of the Carnegie Steel Co., as noted on page 711 of last week's IRON TRADE REVIEW, to the Mead-Morrison Mfg. Co., East Boston, Mass.

8-ton handpower crane, 33-foot span, for a power house in northern New Jersey, to the New Jersey Foundry & Machine Co.

5-ton, 1-motor crane, 38-foot span, for the Gulf Refining Co., 17 State street, New York, reported last week as placed with a Philadelphia builder, went to Alfred Box & Co., the order being handled by Arthur Appleton, 29 Broadway, New York.

5-ton crane for Hubbard & Co., Pittsburgh, to be shipped to San Francisco; awarded the Northern Engineering Works.

3-ton handpower crane, 20-foot span, for a company in Bronx, N. Y., to the New Jersey Foundry & Machine Co.

Cranes for the Lackawanna plant, Buffalo, of the Bethlehem Steel Corp., including ladle crane and several overheads, to the Alliance Machine Co., Alliance, O.

Orders Pending

Five cranes, Gary works, National Tube Co.; bids being tabulated.

Several cranes, Carnegie Steel Co., Homestead, Pa., and other points; bids being tabulated.

Several cranes, Jones & Laughlin Steel Corp., Pittsburgh district, bids being tabulated.

One crane, Central Tube Co., Pittsburgh, for galvanizing department; bids being taken on 15-ton and 25-ton sizes.

20-ton locomotive crane and also a clam shell bucket for the Lehigh & New England railroad; bids asked.

5-ton used electric crane, with span ranging from 40 to 60 feet, for the Edwin Shuttle Works, Long Island City, N. Y.; bids asked.

5-ton crane for Vulcan Iron Works branch of Eastern Malleable Iron Co., New Britain Conn.; pending.

Used cranes for Copper Cliff Co., 421 I. W. Hellman building, Los Angeles; pending.

Recent Industrial Business Changes

PERCY L. BRYNING, representing the Rhode Island Strip Steel Co., Phillipsdale, R. I., at Boston, has changed his address from 12 Pearl street, Boston, to 2149 Commonwealth avenue, Auburndale, Mass. Mr. Bryning was referred to previously as being associated with the Rhode Island Scrap Steel Co. instead of the Rhode Island Strip Steel Co.

* * *

The Aurora Tool Works, Aurora, Ind., has filed certificate of preliminary dissolution.

* * *

The Crosby Co., Buffalo, N. Y., has moved its office at Cleveland, to 1010 Union Mortgage building, as of Sept. 30.

* * *

The Pawtucket Falls Mfg. Co., Pawtucket, R. I., has purchased the plant of the bankrupt D. Goff & Sons, Inc., that city.

* * *

American Fork & Hoe Co., Cleveland, has purchased the Wallingford Mfg. Co., Wallingford, Vt., which it will operate in the future.

* * *

The Pittsburgh Rivet Co., Pittsburgh, has established a sales office at 1020 Union Trust building, Cincinnati, in charge of J. L. Adams.

* * *

American Tobacco Machinery Corp., New York, has changed its name to the Manufacturers' Tobacco Machinery Corp.

* * *

Paul & Rosen, commercial auctioneers, have moved their headquarters from 719 St. Clair avenue, Cleveland, to the Cleveland Discount building.

* * *

Connecticut Tool & Engineering Co., has removed its headquarters to 109 Holland street, Bridgeport, Conn. Daniel J. Williams is manager of the company.

* * *

Clifford C. Glenn, Chicago, manufacturer of valves, is moving Oct. 1 from 1934 Fremont street to a new plant at 6424 North Hermitage avenue, permitting production to be doubled.

* * *

Boye & Emmes Machine Tool Co., Cincinnati, has appointed George F. Foss & Son, Montreal, as exclusive sales agents for the engine lathe line of products manufactured by the Boye company.

* * *

The Birmingham, Ala. office of the Dings Magnetic Separator Co., Milwaukee, has been removed to 513 Twenty-first street. H. M. Gassman is Birmingham representative.

* * *

The Crane Co., Chicago, has purchased the plant at 710 Windsor street, Hartford, Conn., of the National Iron Works. The latter company will retain its equipment for use in a plant to be built elsewhere.

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The Canada Valve & Hydrant Co., Ltd., has been incorporated at Brantford, Ont., to take over the plant and business of the Canada Valve & Hydrant Co., that city. The company manufactures hydrants, valves, and other iron and steel products.

* * *

Bedford Machine Tool Co., 166 Bedford road, Toronto, Ont., has purchased the plant of the Mahaffey Iron Works, at 145 Kendal avenue, that city. The Bedford company will move its equipment to the new building. The Mahaffey company is seeking enlarged quarters.

* * *

The Townsend Advertising Service and the Cummings Advertising Service, Oakland, Cal., have consolidated and will be known in the future as the United Advertising Service with offices in the Lyon building. W. R. Townsend and Geo. A. Cummings will continue in charge.

* * *

Cleveland Duplex Machinery Co., Penton building, Cleveland, has been appointed sales representative in the Cleveland territory by the J. F. Buhr Machine Tool Co., Detroit in the sale of its multiple spindle drill heads and milling machines. G. J. Hawkey is head of the Cleveland Duplex company.

* * *

The Power Plant Supply Co., 707 Canal road, Cleveland, announces the appointment by the Norwalk Co., South Norwalk, Conn., as sales agent in the Cleveland territory for air and gas compressors manufactured by the Norwalk Co. W. E. Berrington is sales manager of the Power Plant Supply Co.

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A. Carpentier & Empire Trading Co., San Francisco, will represent Rhodes & Co., of Los Angeles in the northern part of California while the latter company will represent the former in the southern part of California. A. Carpentier & Empire Trading Co. has moved its offices from 454 California street to the Kohl building.

* * *

Hamburg Foundry Co., Second and Washington streets, Reading, Pa., has purchased the plant of the Bernstein Foundry at Third street and Allegheny avenue, Philadelphia. The two will be consolidated under the title of Fairmount Foundry Co., Inc. The merger was necessary to provide facilities for handling New York and Philadelphia business. L. K. Saul, one of the organizers of the Hamburg company, retains his interests.

* * *

The Roller-Smith Co., 233 Broadway, New York, manufacturer of electrical instruments and circuit breakers, has appointed the Thrall Electric Co., Presidente Zayas, 27 & Esquina A, Habana, Havana, Cuba, as its exclusive representative in Cuba. The Thrall company is the successor of Charles H. Thrall Electric Contracting Co., which in turn succeeded the Charles H. Thrall & Co. The Thrall company, in addition to representing the Roller-Smith Co., is exclusive distributor in Cuba for Allis-Chalmers Mfg. Co., Kinney Mfg. Co., Robbins & Myers Co., for fans; Atlantic Insulated Wire & Cable Co., wires and cables; Philips Glowlampworks; Ilg Electrical Ventilating Co.; Shelton Electric Co.; Trumbull Electric Mfg. Co.; Appleton Electric Co.; Brunner Mfg. Co.; Badger Fire Extinguisher Co.; Brunswick-Kroeschell Co.; Federal Telephone & Telegraph Co., Wilson Welder Co., and Kohler Co.

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

Where additional information is presented, reference is made to date of issue in which previous item appeared.

CHICAGO—H. W. Bowman, 6343 North Western avenue, is taking bids on a 1-story, 75x 100-foot garage of brick and limestone, to be constructed near Barry street. J. K. Neebe, 3713 North Kedvale avenue, is architect.

CICERO, ILL.—The Fire Protection Co., subsidiary of the Kellogg McJay Co., 419 West Eighteenth street, Chicago, is taking bids on constructing 1-story, 160x200-foot plant of brick and concrete at Forty-seventh avenue and Forteenth street, Cicero, Ill.

EVANSTON, ILL.—W. O. Johnson, 651 Chicago avenue, plans constructing 1-story, 150x 170-foot garage of brick and limestone. H. J. Ross, 640 Sheridan road, is architect.

EVANSVILLE, IND.—Crane Co., 836 South Michigan avenue, has plans for constructing 1-story, 114x125-foot brick and stone and reinforced concrete office and warehouse at Eighth and Walnut streets. W. J. Clark, 836 South Michigan avenue, Chicago, is architect. Associate architect is Shopbell, Fowler & Thole, Evansville.

HAMMOND, IND.—New York Central railroad, has awarded the Austin Co., 160 North LaSalle street, Chicago, contract for constructing 1-story, 90x130-foot brick and steel repair shop, costing about $40,000. The Austin Co. is architect and engineer for the project. C. J. Bristie, 139 West Van Buren street, Chicago, is assistant vice president of the New York Central in charge of the new constructon.

INDIANAPOLIS, IND.—The Schwimmer Engineering & Mfg. Co. has been formed with $100,000 capital, to manufacture heating and roasting machines, by Henry W. Schwimmer, Irvin C. Stevenson, Edward O. Hind, Frank E. Worley and Elmer P. Warren.

NEW CASTLE, IND.—Indiana Rolling Mills Co. plans constructing a 1-story addition to its steel plant, and will purchase some machinery.

DAVENPORT, IOWA—Larenson Harvester Co. plans constructing 1-story, 60x200-foot plant on West and Davenport streets.

DES MOINES, IOWA—Kratzer Carriage Co., 100 Southwest First street, plans reconstructing 2-story, 132x132-foot brick and stone and steel plant. Col. C. S. Walker, is in charge of the Kratzer expansion.

KANSAS CITY, KANS.—Kansas City Can & Mfg. Co., has awarded P. J. Bares, 1938 Brighton avenue, contract for constructing 1-story, 50x76-foot plant of brick and stone, in the Fairfax Industrial district. J. G. Braecklin, 703 Federal Reserve Life Insurance building is architect. Kirk Prather, 1017 North Fourth street, is president of the Kansas City Can company. *Noted June 5.*

TOPEKA, KANS.—The Atchison, Topeka & Santa Fe railroad plans constructing 1-story shop addition at its local works.

SHREVEPORT, LA.—Glassell & Wilson have been awarded contract for car barns and machine shop by Shreveport Railways Co. at low bid of $64,934.

STERLINGTON, LA.—H. C. Couch, Pine Bluff, Ark., contemplates constructing an electric light plant here involving an expenditure of approximately $2,500,000.

BALTIMORE—City of Baltimore fire board, through C. P. Richardson, Gay and Baltimore street, president, plans constructing 1-story, $100,000 machine and repair shop.

AUBURNDALE, MASS.—Thomas F. Melody, 253 Auburn street, plans 1-story, brick and concrete garage and repair shop. Putnam & Cox, 144 State street, are architects.

BOSTON—Brighton Iron Works, Inc., has been incorporated with $25,000 capital, by August Valle, Thomas Barnabo, Robert Demenago, Otto Demenago and Frank Valle, all of Natick, Mass.

DORCHESTER, MASS.—The Joseph Pollak Tool & Stamping Co., 81 Freeport street, plans constructing a 2-story addition to its plant.

WORCESTER, MASS.—The New England Sales & Engineering Co has been formed with $25,000 capital and 1000 shares no par value stock, to mapufacture and deal in tools and machinery, by Arthur R. Petterson, Gustaf V. Broberg and Ernest L. Anderson.

DETROIT—Barnes Wire Fence Co. will construct a plant on Northlawn street.

DETROIT—The Detroit Twist Drill Co. plans purchase of automatic and turret lathes.

WYANDOTTE, MICH.—Regent Stove Works was damaged by fire recently with heavy loss. Thomas H. Conway, president, claims losses are covered by insurance and that re-construction probably will be undertaken shortly.

YPSILANTI, MICH.—Jordan Battery Co. has been incorporated for $150,000 to manufacture and deal in storage batteries, by Gerald V. Carrier, Thomas H. Lavier, Jr., and Hugh E. Van de Walker.

HEIDELBERG, MISS.—McClellan Switch Co. has been formed with $10,000 capital, to manufacture frogless switches, rerailers and other railroad equipment, by William D. McClellan and R. B. Hopkins.

KANSAS CITY, MO.—Federal Can Co. recently was incorporated for $50,000 by Philip E. Kopp, A. J. Walker, 3820 Walnut street, and George W. Church, 6444 Woodland avenue, to manufacture cans, faucets, metal containers, etc.

ST. LOUIS—Peoples Motor Bus Co. plans constructing 1 and 2-story, 125 x 250-foot brick garage, office and repair shop building on West End, R. W. Meade, 535 Adelaide avenue, University City, Mo., is president.

CLIFTON, N. J.—Ballwood Pipe Co. plans constructing 1-story, 44x172-foot foundry on Central avenue. W. G. Pattison, 625 Main avenue, is architect.

NEWARK, N. J.—Martian Mfg. Co., 171 Washington street, is in the market for a power press.

NEWARK, N. J.—Union Smelting & Refining Co., St. Charles street, has awarded the Austin Co., 217 Broadway, New York, contract for constructing 1-story, brick, steel and concrete, ingot warehouse. Two 1-story foundries also will be constructed. The company is a subsidiary of the Federated Metals Co., New York.

BROOKLYN, N. Y.—Ernessen Electric Co., 118 Hamilton avenue, is interested in purchase of a drill press and other machinery.

BROOKLYN, N. Y.—Kienle & Co., 109 South Fifth street, has awarded general contract to Gillies & Campbell, 101 Park avenue, New York, for 3-story, brick plant and garage.

BROOKLYN, N. Y.—Yanofsky Iron Works, has been incorporated for $5000 by J. Selliner, M. L. Nathanson and J. L. Schneider, with A. Oboler, 44 Court street, as attorney.

BROOKLYN, N. Y.—Royal Machine & Stamping Corp., has been formed with $3000 capital, to make tools, by C. and H. Becker and C. A. Jamason, with Horowitz, Sanders & Falb, 41 Graham avenue, as attorneys.

BROOKLYN, N. Y.—M. Mienverg, 657 Broadway, New York, has awarded general contract to Perri Contracting Co., 186 Jaralemon street, for 1-story, 107x194-foot garage, and repair shop. J. M. Berlinger, 469 Seventh avenue, New York, is architect.

EAST ROCHESTER, N. Y.—Empire Metal Tank Works is in the market for three crank belt power presses.

NEW YORK—The Lehigh Valley railroad contemplates the erection of car repair shops at Bethlehem, Pa., costing approximately $200,000.

NEW YORK—Union Tank Car Co., 21 East Fourtieth street, plans constructing 1-story car repair and maintenance shop at Penrose avenue and Gallows lane.

NEW YORK—Switch Plate Corp. has been formed with 1000 shares no par value common stock to manufacture and deal in electrical novelties, by L. A. Kahn, S. F. Kelly and M. I. Dempsey, with Leventritt, Riegelman, Carns & Goetz, 128 Broadway, as attorneys.

SPRING VALLEY, N. Y.—Judge Auto Co. has been incorporated for $35,100 to own and operate garages and automobile repair shops, by W. Engelhardt, K. and J. W. Judge, with T. Gagan, Haverstraw, as attorney.

TROY, N. Y.—Tool & Device Corp. has been incorporated for $15,000 to manufacture and deal in hydraulic apparatus, by F. H. Prins, T. C. Halles, Jr., and W. M. Mead, with N. R. Holmes, as attorney.

CINCINNATI—The Reliable Pattern & Casting Co. has been formed with $20,000 capital, by Elmer A. Young, Edward Korten, Carl Young, Arthur Kuhn and John Young, Jr.

CINCINNATI—O. J. Shafer Pattern Works, Inc., has been chartered with $25,000 capitalization, to manufacture and deal in wood and metal patterns, by Oscar J., Arthur C., Robert W., Emma M. and Oscar L. Shafer.

KENT O.—The C. L. Gougler Machine Co. has been formed with $15,000 capital, by Charles L. Gougler, Paul H. Davey, James A. G. Davey, Maxine B. Davey and Mary A. Gougler, to own and operate machine shops, and build machinery.

MANSFIELD, O.—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has awarded contracts for constructing 1 and 4-story additions to its plant here. *Noted July 31.*

SALEM, O.—The Victor Stove Co. plans

Warehouse Steel Prices

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.10c
Detroit	3.15c
Los Angeles	3.25c
New York	3.24c
Philadelphia	3.00c to 3.10c
Pittsburgh	2.90c
San Francisco	2.40c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c

IRON BARS

Boston	3.265c
Buffalo	3.35c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
New York	3.24c
Philadelphia	3.00c to 3.10c
St. Louis	3.15c

REINFORCING BARS

Boston	3.25c to 3.50c
Buffalo	3.40c
Chicago	2.15c
Cincinnati	3.30c
Cleveland	3.10c
Detroit	3.15c
Los Angeles, C. L.	3.60c
Los Angeles, L. C. L.	4.00c
New York	2.80c
Philadelphia	2.75c to 2.85c
Pittsburgh	2.25c to 2.30c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.50c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.20c
Detroit	3.25c
Los Angeles	3.25c
New York	3.34c
Philadelphia	3.00c to 3.10c
Pittsburgh	3.00c
San Francisco	3.60c
Seattle	3.35c
St. Louis	3.25c
St. Laul	3.35c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.20c
Cleveland, 3/16-inch	3.425c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Los Angeles	3.25c
New York	3.34c
Philadelphia	3.00c to 3.10c
Philadelphia, 3/16-inch	3.18c to 3.28c
Pittsburgh	3.00c
San Francisco	3.25c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.35c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	3.915c
Buffalo	4.05c
Chicago	3.80c
Cincinnati	3.90c
Cleveland	3.45c to 3.76c
Detroit	3.95c
Los Angeles	4.05c
New York	3.89c
Philadelphia	3.75c
San Francisco	4.75c
Seattle	4.50c
St. Louis	3.90c
St. Paul	4.05c

NO. 28 BLACK SHEETS

Boston	5.00c
Buffalo	4.75c
Chicago	4.60c
Cincinnati	4.55c
Cleveland	4.35c to 4.55c
Detroit	4.65c
Los Angeles	5.15c
New York	4.60c
Philadelphia	4.75c
San Francisco	5.55c
Seattle	5.50c
St. Louis	4.65c
St. Paul	4.85c

NO. 28 GALVANIZED SHEETS

Boston	6.00c
Buffalo	5.85c
Chicago	5.50c
Cincinnati	5.65c
Cleveland	5.45c to 5.65c
Detroit	5.75c
Los Angeles	6.00c
New York	5.60c
Philadelphia	5.85c
San Francisco	6.25c
Seattle	6.50c
St. Louis	5.65c
St. Paul	5.65c to 5.90c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.85c
Detroit	3.80c
Los Angeles	4.00c
New York	3.99c
Philadelphia	3.85c
Pittsburgh	3.60c
San Francisco	4.50c
Seattle	4.25c
St. Paul	3.90c

HOOPS

Boston	5.50c
Buffalo	4.40c
Chicago	4.15c
Cleveland, 1-inch and wider No. 20 and heavier	3.85c
Cleveland, narrower than 1-inch	4.35c
Detroit	4.30c
New York	4.49c
Philadelphia, ¾-inch and wider, 20 gage and heavier	4.10c
Philadelphia—narrower than ¾-inch	4.60c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.70c

COLD FINISHED STEEL

Boston (shapes)	4.55c
Boston (rounds)	4.05c
Buffalo (rounds)	4.20c
Buffalo (shapes)	4.70c
Chicago (shapes)	4.30c
Chicago (rounds)	3.80c
Cincinnati (rounds)	4.05c
Cincinnati (shapes)	4.55c
Cleveland (rounds)	3.90c
Cleveland (shapes)	4.40c
Detroit (rounds)	4.10c
Detroit (shapes)	4.60c
Los Angeles (rounds)	5.25c
New York (rounds)	4.05c
New York (shapes)	4.55c
Philadelphia (rounds)	4.05c
Philadelphia (shapes)	4.55c
Pittsburgh (rounds)	3.80c
Pittsburgh (sq. hex. and flats)	4.30c
San Francisco (rounds)	5.25c
Seattle (rounds)	5.00c
St. Paul (rounds)	4.05c

WELDED PIPE

Discounts from warehouse, New York City
Standard Steel Pipe
(Subject to Shading)

	Black	Galvanized
⅛-⅜-inch butt	—31	+ 2
½-inch butt	—41	—24
¾-inch butt	—46	—32
1/3-inch butt	—48	—34
3½-inch lap	—44	—30
7-8-inch lap	—41	—11
9-10-inch lap	—35	— 8
11-12-inch lap	—34	— 6

Wrought Iron Pipe

	Black	Galvanized
⅛-⅜-inch butt	+44	+78
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1-1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
3-6-inch lap	—11	+ 6
7-12-inch lap	— 3	+16

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 55 per cent iron	$5.65
Mesabi bessemer, 55 per cent iron	5.40
Old Range nonbessemer, 51½ per cent iron	4.90
Mesabi nonbessemer, 51½ per cent iron	4.75

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.00
Copper free low phosphorus 53 to 65 per cent	11.50 to 12.50

FOREIGN IRON ORE

Cents per unit, c.i.f. Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	9.50 to 10.00
Algerian low phosphorus, 52 to 54 per cent	10.50 to 11.00
Swedish and Norwegian low phosphorus, 68 per cent	11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent	9.00 to 10.00
Spanish foundry or basic, 50 to 54 per cent	8.00 to 9.00
Algerian foundry and basic, 50 to 54 per cent	8.00 to 9.00

Manganese Ore

Prices do not include duty at rate 1 per cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent....nominal
Indian, minimum 47 per cent....nominal
Caucasian, 53 to 55 per cent....
.....Ordinary, 40 cents c.i.f. tidewater
.....Washed, 42 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$18.00 to 23.50
Washed gravel, imported duty paid eastern tidewater, per net ton	18.00 to 18.50

Bourne-Fuller Service

includes immediate shipment of all Iron and Steel materials from Cleveland and Cincinnati

Warehouses

If you are not receiving our Stock-list we shall be glad to send it to you regularly upon request.

Upson Works

Open Hearth Steel Bars for Special uses. Also a complete line of Bolts and Nuts. Prompt Shipments.

THE
BOURNE-FULLER CO.
Iron, Steel
Pig Iron
Coke
CLEVELAND

New York **Chicago**
San Francisco
Cincinnati **Detroit**

constructing 2-story addition to plant to replace that recently damaged by fire. *Noted Sept.* 11.

TOLEDO, O.—The Electric Auto-Lite Corp. has purchased a building on Jefferson street, from the Knights of Columbus, where it plans establishment of a plant.

TOLEDO, O.—The Toledo Mechanical Appliance Co. has been incorporated for $5000 to manufacture and deal in mechanical equipment, by Frank B. Miles, William E. Vogt, Frank I. Isbell, John A. Fisher and Frank P. Kennison.

McALESTER, OKLA.—Southwestern Power Co. has announced plans for a 66,000-volt high power transmission line from McAlester to Coalgate and intermediate points including erection of transforming stations. G. W. Skow is vice president and general manager.

QUAPAW, OKLA.—Snowball Mining Co., incorporated by H. W. Jenkins, Quapaw, A. W. Cox, Joplin, Mo. and H. M. Miller, Pittsburg, Kan. with $32,000 capital to operate lead and zinc mining properties.

PORTLAND, OREG.—The Steel Tank & Pipe Co. of Oregon, plans constructing complete plant on 15½ acre site to cost from $500,000 to $750,000. F. W. Small is general manager in care of West Coast Iron & Steel Works, Twenty-eighth and Nicoli streets.

BLOOMSBURY, PA.—The New York Construction Co. will start work at once on the erection of a large automobile plant between this city and Berwick. The name of the company for which the plant is to be erected will be announced shortly.

BRADDOCK, PA.—United Electric Light Co. plans establishment of a power station here to cost approximately $700,000. A site is owned by the company, 120x240 feet, directly across the river from the American Chain Co.

CORRY, PA.—Corry Jamestown Mfg. Co., plans erection of 4-story, 61 x 131-foot plant and power house, for which Oliver Johnson is architect and engineer. O. S. Hillstrom, 19 North Center street, is president of the Corry company.

PHILADELPHIA—Plans are being prepared by Wm. Steele & Sons Co., architects, for a plant addition for Brownhill & Kramer, at 406 Memphis street.

PHILADELPHIA—Marcus & Pachman, 429 South Fifty-seventh street, will make alterations to their warehouse at 755-69 South Eleventh street, costing $15,000.

PHILADELPHIA—Contract for the erection of a $200,000 building for the Model Mill Co., Inc., has been awarded the William Steele & Sons Co. The proposed structure will be four stories high, of reinforced concrete.

PHILADELPHIA—Stone & Webster, consulting engineers, have finished plans for the erection of a power house addition for the Philadelphia Electric Co., requiring 300 tons of steel.

PHILADELPHIA—Contract for the erection of a $51,000 power house for the Germantown Dispensary and hospital at 530 East Penn street, has been awarded to Ketchum & McQuade. According to plans by Arthur H. Brockie, the proposed structure will be of brick and reinforced concrete, 1-story high 61x97 feet.

TOPTON, PA.—The Topton Foundry Co. has completed plans for the erection of a 150x200-foot plant addition to be used as an enameling department.

VERONA, PA.—The Woodings Forge & Tool Co., recently organized, has purchased the plant of the Valley Forging Co. where it will make railway track tools and car forgings.

WATSONTOWN, PA.—Jones Foundry Co., manufacturer of castings plans rebuilding portion of its plant recently damaged by fire.

PROVIDENCE, R. I.—Narragansett Light & Power Co. has awarded contract for 107x147-foot boiler house of brick, stone, steel and concrete.

ROCK HILL, S. C.—National Wire Goods Mfg. Co. plans purchase of a cutting machine and power straightener.

CHATTANOOGA, TENN. — Chattanooga Foundry & Roofing Co. has been incorporated with $175,000 capital, to operate a foundry and manufacture, by B. F. Annis, R. T. Settles, and J. D. Kennedy, 727 Hanover street.

CHATTANOOGA, TENN.—Gallagher Boiler Repair Co., Inc., has been incorporated for $25,000 to manufacture and deal in and repair boilers, by J. J. Gallagher, P. Hanson, J. J. Gallagher, Jr., M. Butler and W. B. Swaney.

KNOXVILLE, TENN.—Hodgson Machinery Co., Knoffi building, is interested in the purchase of woodworking machinery, motors, baling presses, etc.

MEMPHIS, TENN.—The Kelly Axe & Tool Co., Charleston, W. Va., has purchased a large tract of land on the Wolf river between the Tennessee Hoop Co. and the Anderson-Tully mill, where it plans establishment of a river terminal to act as distributing center for the South, Southeast and Southwest.

DALLAS, TEX.—Power Mfg. Co., Marion, O., has been organized here with $600,000 capital, to construct a plant for the manufacture of gas engines and production of gray iron castings.

ELGIN, TEX.—Dunbar Rim Tool Co. has been formed by W. H. Rives, Jr., J. V. Dunbar and A. M. Felts, to manufacture tools for automotive use.

HOUSTON, TEX.—Mack Mfg. Co. plant at Mack street and the Houston Belt & Terminal tracks is being remodeled for the Reed Roller Bit Co., 3602 Harrisburg boulevard. A 1-story garage, 20x100 feet also will be constructed. A foundry, machine shop and forge shop used by the Mack company are the buildings to be remodeled. *Noted Sept.* 11.

PIONEER, TEX.—Western Carbon Co. has been granted permit to do business in Texas with $100,000 capital. J. W. Shewmaker is state manager. Company proposes to erect a plant for manufacture of carbon black.

RICHMOND, VA.—Fretwell Safety Locked Razor Corp., contemplates constructing steel and reinforced concrete plant with 27,000 square feet floor space to manufacture razors, having annual output of 1,000,000. J. W. Fretwell is president and George W. Harrington, 2905 Grove avenue, secretary. *Noted Sept.* 18.

CUMBERLAND, W. VA.—West Virginia-Maryland Gas Co. plans constructing an artificial gas plant to cost approximately $500,000.

MARSHFIELD, WIS.—The Hub Granite Co., owned by G. Lehnheerr and Thomas Harshner, have negotiations under way for the erection of a cutting, polishing and finishing plant on Spruce street, to handle the output of the new quarries recently opened in the town of Richfield. The common council has been asked to vacate South Pruce street to make room for the plant and trackage.

MILWAUKEE—Edwards Motor Car Co., has let contracts to Banner Iron & Wire Works, for a warehouse at Thirty-sixth street and Grand avenue. A. L. Seidenschwartz is architect.

MILWAUKEE—Schroeder Bros., Twenty-seventh and Forest Home avenues, are interested in the purchase of a tool lathe and other machinery. G. A. Schroeder is purchasing agent.

MILWAUKEE—Articles of incorporation have been filed by the Badger Belt & Rubber Co., capital stock $5000. Incorporators are August Weber, Kenneth Quintal and Ben J. Miller. A general belting and industrial equipment business will be conducted.

MILWAUKEE—A charter has been granted to the Guaranteed Gear Service Co., with headquarters at 208 Wells street. The incorporators are P. E. Kirchhartz, W. G. Ritter and F. R. Van Horne. A repair and service shop will be installed.

MILWAUKEE—Contracts have been awarded by Frank C. Schultz, 2002 Fond du Lac avenue, for the erection of a $35,000 public garage and repairshop at Wright street and Teutonia avenue. Bids are now being taken on all equipment.

MILWAUKEE—The Trackson Full-Crawler Co., capital stock $5000, has been incorporated by Frank L. McNamara, Herman E. Friedrich and John H. Hurley, of Bottum, Hudnall, Lecher & McNamara, 68 Wisconsin street, to manufacture and deal in tractors, trailers, etc.

MILWAUKEE—The Hexcel Radiator Co. has been incorporated with $5000 capital to manufacture and deal in automobile, truck and tractor radiators. Incorporators are Norman L. Baker, Arthur Breslauer and I. S. Hausen, of the law firm of Baker & Zimmer, Wells building, Milwaukee.

NEW HOLSTEIN, WIS.—B. F. Arps, manufacturer of automobile, truck and tractor parts and equipment, has incorporated his business as the Arps Mfg. Co., capital stock, $15,000. Other incorporators are Adolph and Paul Langenfeld.

OCONTO, WIS.—Oconto county, E. M. McAllister, Highway commissioner, will construct 1-story, 42x60-foot machine shop.

WAUSAU, WIS.—A private garage, storage, warehouse and repair shop, 75 x 180 feet, will be built by the Wisconsin Valley Electric Co., operating a large system of hydroelectric generating plants. About $60,000 will be spent for building and machinery. Harold Geisse is general manager.

Business in Canada

CALGARY, ALB.—Harry G. Kemp, Ltd., has been incorporated to manufacture and deal in iron, steel, machinery, tools, implements, etc., with $100,000 capital stock; by Harry G. Kemp, William H. Barnes, Verne L. Anderson and others.

TRAIL, B. C.—The Consolidated Mining & Smelting Co., has started construction work here in connection with an extensive building program. The lead refinery will be increased from 170 to 300 tons per day; the zinc plant, with a present capacity of about 100 tons daily will be increased 50 per cent; the silvery refinery will be extended and in this connection steps are being taken to make a commercial recovery of antimony. A plant will also be installed for treating this by-product from the silvery refinery.

VANCOUVER, B. C.—The B. C. Valve Co.,

Ltd., 514 Standard Bank building, will build addition to its plant here. Plans and specifications with owner.

ARNPRIOR, ONT.—J. C. Ward plans purchase of a small lathe and other machine shop equipment.

BRAMPTON, ONT.—The Brampton Motors, Ltd., have been incorporated to manufacture and deal in automobiles, trucks, tractors, machinery, etc., with $40,000 capital stock; by William C. H. Swinburne, Alexander G. Anderson, Thomas Morrison and others.

BRANTFORD, ONT.—Canada Valve & Hydrant Co., Ltd., has been incorporated to acquire and take over the plant and business of the Canada Valve & Hydrant Co., here, to manufacture hydrants, valves, iron and steel products, etc., with $50,000 capital stock; by Edward F. Roberts, Henri K. Jordan, Willoughby S. Brewster and others.

CARP, ONT.—Gamble Bros., are asking for complete equipment for garage and auto repair shop.

LONDON, ONT.—The London Hardware & Electrical Co., Ltd., has been incorporated to manufacture hardware, iron and steel products, electrical machinery, tools, etc., with $50,000 capital stock; by William H. Thornton, Arthur E. Small, Joseph H. Plested and others.

PARRY SOUND, ONT.—J. M. & J. O. Reid, Ltd., have been incorporated to manufacture and deal in machinery, engines, tools, implements, iron and steel products, etc., with $40,000 capital stock; by James M. Reid, James O. Reid, James E. Hawkins and others

PRESTON, ONT.—The Hirst Mfg. Co., is contemplating establishing a plant here for the manufacture of knife sharpeners, paring knives, automatic can openers, etc. Percival W. Hirst is president of the ocmpany.

RENFREW, ONT.—Kelly & Graham will purchase auto repair shop equipment including lathe, drill press and other tools.

SAULT STE. MARIE, ONT.—The Soo Boat Works, Ltd., has been incorporated to build and operate boats, motor launches, engines, etc., with $40,000 capital stock, by John Munnoch, Ernest V. McMillan, Ester C. Johnston and others.

SAULT STE. MARIE, ONT.—Soo Mining & Development Co., Ltd., has been incorporated to develop and operate mines and to treat, smelt and refine ores, metals, etc., with $200,000 capital stock; by Michael A. Sheridan, Michael J. Mahon, William S. Maguire and others.

ST. MARY'S ONT.—The Macnamara Motor Wheels, Ltd., have been incorporated to manufacture motor wheels, accessories, automobiles, parts, etc., with $300,000 capital stock; by Russell E. Macnamara, Arthur W. Ford, William A. Sutherland and others.

TORONTO, ONT.—The Standard Steam Oil Burners, Ltd., have been incorporated to manufacture and deal in stoves, furnaces, heating appliances, iron and steel products, etc., with $40,000 capital stock; by Joseph H. Smith, Frederick C. Hastings, Wilfred H. Clark and others.

TORONTO, ONT.—Bedford Machine Tool Co., 166 Bedford road, has purchased a 2-story brick building, 40x60 feet from the Mahaffey Iron Works, at 145 Kendal avenue. The new owner will immediately remove its machinery and equipment to the new building, and it is also expected that additional equipment will be installed. The Mahaffey Iron Works is looking for more commodious quarters for its plant.

TORONTO, ONT.—J. Hunt Standford & Son, 67 Yonge street arcade, are preparing plans for garage to cost $150,000. Equipment will be purchased.

WINDSOR, ONT.—The Auto Specialties Mfg. Co., is building an addition to its plant here to cost $15,000 and is in the market for equipment including stamps, dies, polishing machinery, tools, etc.

MONTREAL, QUE.—G. Morann, 252 City hall avenue, will purchase tools and complete equipment for automobile repair plant and garage.

MONTREAL, QUE.—The Grinnell Co. of Canada, Ltd., Beaumont street, manufacturer of sprinklers, compressors, etc., will build galvanizing plant here and has awarded general contract to Anglin Norcross, Ltd., Montreal.

MONTREAL, QUE.—The Hamilton Motors, Ltd., have been incorporated to manufacture and deal in automobiles, trucks, tractors, etc., with $50,000 capital stock; by John W. Cook, Theodore B. Heney, Duncan R. Anderson and others.

ROBERVALE, QUE.—The Robervale Foundry was damaged badly by fire with loss to building and equipment. It is expected that owners will rebuild without delay.

New Trade Publications

CORE OILS—The Pneulec Machine Co., Ltd., Birmingham, England, has issued a folder describing its various core oils. A machine for mixing the oil also is described.

NON-SLIP FLOORS—In a series of small folders the Norton Co., Worcester, Mass., calls attention to floor and stair tile, and treads and mosaics, suitable for shops and other uses.

PIPE—Facts about pipe and its manufacture, with a few statistics relating to sizes, weights and other dimensions make up ten small pages in a folder by the Youngstown Sheet & Tube Co.

SHEET METAL PRESSES—A circular by the Niagara Machine & Tool Works, Buffalo, N. Y., shows types of horn and inclinable presses, punches and shears for sheet metal work.

CEMENT—The Keystone Refractories Co., Inc., New York, has issued a booklet describing some of the uses of a cement as a binder for fire brick, silica tile, and granular refractories. The booklet is illustrated.

TRUCKS—A combination floor and rail lift truck is described in a bulletin issued by the Plimpton Lift Truck Corp., Stamford, Conn. The truck is designed for handling pig iron and scrap in foundries.

FURNACES—Recuperator furnaces for the steel industry are described and illustrated in a folder published by the Combustion Engineering Corp., New York. A sectional view of the furnace is shown and the type of tile used is illustrated.

SAND BLAST ROOMS—Rooms for sandblast, shot blast and grit blast are described and illustrated in a 12-page booklet recently issued by the W. W. Sly Mfg. Co., Cleveland. The various types of rooms to fit the different needs in the foundry are described. A partial list of users is included.

ROLLER BEARINGS—Use of these devices in belt conveyors to reduce friction and improve operating conditions is described in a catalog issued by the Hyatt Roller Bearing Co., Newark, N. J. Charts, halftones, and statistical tables illustrate the text and details of construction are made clear by sectional drawings.

CONTROL EQUIPMENT—A 27-page bulletin on automatic station control equipment recently has been issued by the General Electric Co., Schenectady, N. Y. This describes briefly the uses and advantages of this type of equipment and is well illustrated. The greater part of the bulletin is devoted to a list of the installations up to Jan. 1, 1924.

POROUS PLATES—Filtering through plates of electrically fused alumina grains bonded by aluminous glass is described in a booklet by the Norton Co., Worcester, Mass. A product of the electric furnace, these porous plates are used for filtering liquids, oxidation, agitation and absorption for humidifying. Data as to the physical characteristics and action of these plates are given.

ELEVATOR CONTROLLERS—Electric elevator control equipment manufactured by the Cutler-Hammer Mfg. Co., Milwaukee, has been given adequate representation in a 48-page catalog just sent out. Installations of large and small extent are shown and described, and detail of the various control devices is presented, including safety switches, door controls and brakes.

HEAT TREATING EQUIPMENT—Electric heat treating furnaces and similar equipment using oil or gas fuel are illustrated in two bulletins by Tate-Jones & Co., Pittsburgh. The latter are designed especially for pack and case hardening and annealing, and the former for application of heat under close control, with automatic regulation. The pages are well illustrated by halftones.

FOUNDRY CONSTRUCTION — Truscon Steel Co., Yougnstown, has prepared a booklet describing the new foundry of the Studebaker Corp., South Bend. The layout, construction and operation of the foundry are described. Daylighting and ventilation are cared for in the most approved fashion. Much helpful information for anyone interested in industrial building will be found in this publication.

BLOWER FANS—Following recent advances in automatic stokers and boilers in steam plants similar improvements have been made in means for supplying air at steady pressure and volume. High speed fans for this purpose are described in a bulletin by the American Blower Co., Detroit. It also presents curves covering characteristics of this company's fans, specification sheets describing and illustrating the parts and capacity tables based on tests.

TUBE COUPLINGS—Devices for joining tubes for use in air compressors, automotive pneumatic controls and associated equipment are described and illustrated in a price list issued by the Parker Appliance Co., Cleveland. By flaring the end of the tube over the nut of the coupling, which acts as a die, and clamping it tightly between the two parts of the coupling, the inside diameter of the tube remains uninterrupted at the coupling. Absence of threaded joints is claimed as a great advantage in a wide class of work.

Iron and Steel Scrap Prices

CORRECTED TO TUESDAY NOON GROSS TONS DELIVERED TO CONSUMER

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	12.50 to 13.00
Boston (dealers)	12.50 to 13.00
Buffalo	17.25 to 18.00
Chicago	16.50 to 17.00
Cleveland	16.75 to 17.00
Cincinnati	14.00 to 14.50
Detroit (dealers)	15.25 to 15.75
Eastern Pennsylvania (chem.)	15.50 to 16.00
New York (dealers)	13.00 to 13.50
Pittsburgh	20.00
St. Louis	15.50 to 16.00
Valleys	19.25 to 19.50
No. 1 railroad steel New York (dealers)	13.50 to 14.00

COMPRESSED SHEETS

Buffalo	16.00 to 17.00
Chicago	13.50 to 14.00
Cleveland	14.50 to 14.75
Detroit(dealers)	13.00 to 13.50
Pittsburgh	17.50 to 18.00
Valleys	17.00 to 17.25

BUNDLED SHEETS

Buffalo	13.00 to 13.50
Cincinnati	11.00 to 11.50
Cleveland	13.50 to 14.00
Detroit	10.50 to 11.00
Eastern Pennsylvania	23.00 to 25.00
Pittsburgh	16.00 to 16.50
St. Louis	8.50 to 9.00
Valleys	15.50 to 16.00

SHEET CLIPPINGS, LOOSE

Chicago	9.50 to 10.00
Detroit	8.50 to 9.00

STEEL RAILS, SHORT

Birmingham	12.50 to 13.00
Detroit	14.50 to 15.00
Chicago	18.50 to 19.00
Cincinnati	16.50 to 17.00
Cleveland (over 6 ft.)	16.50 to 16.75
St. Louis	19.00 to 19.50

STOVE PLATE

Birmingham	13.50 to 14.00
Boston (consumers)	15.00 to 15.50
Buffalo	16.50 to 17.00
Chicago	17.50 to 18.00
Cincinnati (net tons)	11.00 to 11.50
Cleveland	15.00 to 15.25
Detroit (net tons) dealers	13.50 to 14.00
Eastern Pennsylvania	15.50
New York (dealers)	12.00 to 12.50
Pittsburgh	14.50 to 15.00
St. Louis	16.50 to 17.00

LOW PHOSPHORUS

Buffalo	19.00 to 19.50
Cincinnati	15.00 to 15.50
Eastern Pennsylvania	19.50 to 20.50
Pitts. billet and bloom crops	22.50 to 23.00

SHOVELING STEEL

Chicago	16.25 to 16.75
Pittsburgh	15.00 to 15.50
St. Louis	15.25 to 15.75

KNUCKLES, COUPLERS, SPRINGS

Chicago	19.25 to 19.75
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	22.00 to 22.50
St. Louis	20.50 to 21.00

FROGS, SWITCHES, GUARDS

Chicago	16.50 to 17.00
Eastern Pennsylvania	17.00 to 17.50
St. Louis	17.50 to 18.00

BOILER PLATE, CUT

St. Louis	11.50 to 12.00

ANGLE BARS—STEEL

Chicago	18.00 to 18.50
St. Louis	17.50 to 18.00

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	$12.00 to 13.00
Boston (dealers)	13.50 to 14.00
Buffalo	15.00 to 15.50
Cleveland, No. 1	14.25 to 14.50
Chicago, No. 1	16.75 to 17.25
Chicago, No. 2	16.50 to 17.00
Cincinnati, No. 1	12.00 to 12.50
Detroit, No. 2	15.00 to 15.50
Eastern Pennsylvania	18.50 to 19.00
New York, No. 1 (dealers)	15.00 to 15.50
Pittsburgh, No. 1	16.50 to 17.00
Pittsburgh, No. 2	20.00
St. Louis, No. 1	15.00 to 15.50
St. Louis, No. 2	15.00 to 15.50

WROUGHT PIPE

Boston (dealers)	11.50 to 12.00
Buffalo	11.00 to 12.00
Eastern Pennsylvania	16.50 to 17.50
New York (dealers)	12.25 to 12.75

YARD WROUGHT

Boston	12.50 to 13.00
Eastern Pennsylvania	17.00 to 18.00

CITY WROUGHT

New York, long	13.50 to 14.00

BUSHELING

Buffalo	16.00 to 17.00
Chicago, No. 1	13.75 to 14.50
Chicago, No. 2	9.50 to 10.00
Cincinnati, No. 1	10.50 to 11.00
Cleveland, No. 1	14.75 to 15.25
Cleveland, No. 2	14.00 to 14.25
Detroit, No. 1	12.00 to 12.50
Detroit, No. 2 (new)	11.50 to 12.00
Detroit, No. 2 (old)	10.50 to 11.00
Eastern Pennsylvania	14.00 to 14.50
Pittsburgh, No. 1	14.00 to 14.50
St. Louis, No. 1	14.00 to 14.50

MACHINE SHOP TURNINGS

Birmingham	6.00 to 7.00
Boston (dealers)	8.50 to 9.00
Buffalo	12.50 to 13.00
Chicago	10.00 to 10.50
Cincinnati	10.00 to 10.50
Cleveland	14.25 to 14.50
Detroit (dealers)	11.00 to 11.50
Eastern Pennsylvania	14.00 to 14.50
New York (dealers)	9.50 to 10.00
Pittsburgh	15.00 to 15.50
St. Louis	9.00 to 9.50
Valleys	14.00 to 14.25

CAST IRON BORINGS

Birmingham (chemical)	15.00 to 16.00
Birmingham (plain)	7.00 to 8.00
Boston (chemical	11.00 to 11.50
Boston (dealers)	8.50 to 9.00
Buffalo	13.00 to 13.50
Chicago	12.00 to 12.50
Cincinnati	11.00 to 11.50
Cleveland	15.25 to 15.50
Detroit (dealers)	11.00 to 11.50
Eastern Pennsylvania (chem.)	14.00
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.50 to 10.00
Pittsburgh	15.00 to 15.50
St. Louis	11.50 to 12.00
Valleys	15.00 to 15.50

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.75 to 9.00
Cleveland	15.25 to 15.50
Detroit (dealers)	11.00 to 11.50
Eastern Pennsylvania	12.50 to 13.50
New York (dealers)	8.25 to 9.00

IRON AXLES

Birmingham	19.00 to 19.50
Boston (consumers)	31.00 to 32.00
Buffalo	25.00
Chicago	28.50 to 29.00
Cincinnati	23.50 to 24.00
St. Louis	27.00 to 27.50
Eastern Pennsylvania	29.00 to 31.00

IRON RAILS

Buffalo	19.00 to 20.00
Chicago	18.50 to 19.00
Cincinnati	13.00 to 13.50
St. Louis	16.50 to 17.00

PIPES AND FLUES

Chicago	13.00 to 13.50
Cincinnati	10.00 to 10.50
Cleveland	12.00 to 12.50
St. Louis	11.50 to 12.00

RAILROAD GRATE BARS

Buffalo	15.50 to 16.00
Chicago	17.00 to 17.50
Cleveland	15.00 to 15.25
Eastern Pennsylvania	15.00 to 15.50
New York (dealers)	13.00 to 13.50
St. Louis	16.00 to 16.50

FORGE FLASHINGS

Boston (dealers)	9.50 to 10.00
Buffalo	14.50 to 15.00
Chicago	12.50 to 13.00
Cleveland (under 10 in.)	14.75 to 15.00
Cleveland (over 10 in.)	13.50 to 14.00
Detroit (dealers)	11.00 to 11.50

FORGE SCRAP

Boston (dealers)	9.50 to 10.00
Chicago	19.50 to 20.00
Eastern Pennsylvania	14.00 to 14.50

ARCH BARS AND TRANSOMS

Chicago	21.25 to 21.75
St. Louis	21.00 to 21.50

ANGLE BARS—IRON

Chicago	20.25 to 20.75
St. Louis	19.50 to 20.00

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	9.50 to 10.00
Buffalo	14.50 to 15.00
Chicago	14.00 to 14.50
Cleveland	15.25 to 15.50
Eastern Pennsylvania	15.50 to 16.00
Pittsburgh	15.50 to 16.00
St. Louis	13.00 to 13.50

STEEL CAR AXLES

Birmingham	17.00 to 18.00
Boston (consumers)	21.00 to 22.00
Buffalo	19.00 to 20.00
Chicago	20.75 to 21.25
Cleveland	18.00 to 18.75
Eastern Pennsylvania	23.00 to 24.00
Pittsburgh	22.00 to 22.50
St. Louis	21.50 to 22.00

SHAFTING

Boston (consumers)	21.00 to 22.00
Chicago	20.75 to 21.25
Eastern Pennsylvania	23.00 to 25.00
New York (dealers)	18.00 to 18.50
St. Louis	19.50 to 20.00

Iron Foundry Scrap

CAR WHEELS

Birmingham, tram car	15.00 to 16.00
Birmingham, iron	14.00 to 15.00
Boston (consumers)	17.00 to 17.50
Buffalo	17.50 to 18.00
Chicago, iron	18.50 to 19.00
Chicago, steel	19.25 to 19.75
Cincinnati	13.00 to 13.50
Eastern Pennsylvania	17.50 to 18.00
New York iron (dealers)	14.75 to 15.25
Pittsburgh, iron	19.50 to 20.00
Pittsburgh, steel	22.00 to 22.50
St. Louis, iron	17.50 to 18.00

NO. 1 CAST SCRAP

Birmingham, cupola	14.00 to 15.00
Boston (consumers)	19.50 to 20.00
Buffalo	17.00 to 17.50
Chicago, No. 1 machinery	20.50 to 21.00
Cincinnati No. 1 machinery cupola (net tons)	18.50 to 19.00
Cleveland, cupola	19.00 to 19.25
Detroit (net tons) (dealers)	15.50 to 16.00
Eastern Pennsylvania, cupola	18.00 to 18.50
New York, cupola (dealers)	14.75 to 15.25
Pittsburgh, cupola	18.50 to 19.00
San Francisco	20.00
Seattle	18.00
St. Louis,	19.50 to 20.00
St. Louis, agricultural	19.50 to 20.00
Valleys	19.50 to 20.00

HEAVY CAST

Boston (consumers)	16.00 to 17.00
Buffalo (breakable)	16.00 to 16.50
Cleveland	13.00 to 13.25
Detroit (automobile) (net ton)	15.50 to 16.00
Eastern Pennsylvania	16.50 to 17.00
New York (dealers)	13.50 to 14.00
Pittsburgh	16.00 to 16.50

MALLEABLE

Boston (railroad)	17.25 to 17.75
Buffalo	18.00 to 18.50
Chicago, railroad	18.25 to 18.75
Chicago, agricultural	17.50 to 18.00
Cincinnati, agricultural	14.00 to 14.50
Cincinnati, railroad	14.50 to 15.00
Cleveland, agricultural	17.50 to 17.75
Cleveland, railroad	18.50 to 18.75
Detroit (dealers)	15.50 to 16.00
Eastern Pennsylvania, railroad	15.50 to 16.50
Pittsburgh, railroad	17.50 to 18.00
St. Louis, agricultural	15.50 to 16.00
St. Louis, railroad	15.50 to 16.00

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham tram car	15.50 to 16.00
Boston (dealers)	13.50 to 14.00
Chicago	17.50 to 18.00
Cleveland	17.25 to 17.50
Detroit	14.50 to 15.00
Eastern Pennsylvania	18.50 to 19.00
New York (dealers)	15.50 to 16.00
Pittsburgh district	20.50 to 21.00
St. Louis	18.50 to 19.00

LOCOMOTIVE TIRES

Chicago	19.00 to 19.50
St. Louis	17.00 to 17.50

LOW PHOSPHORUS PUNCHINGS

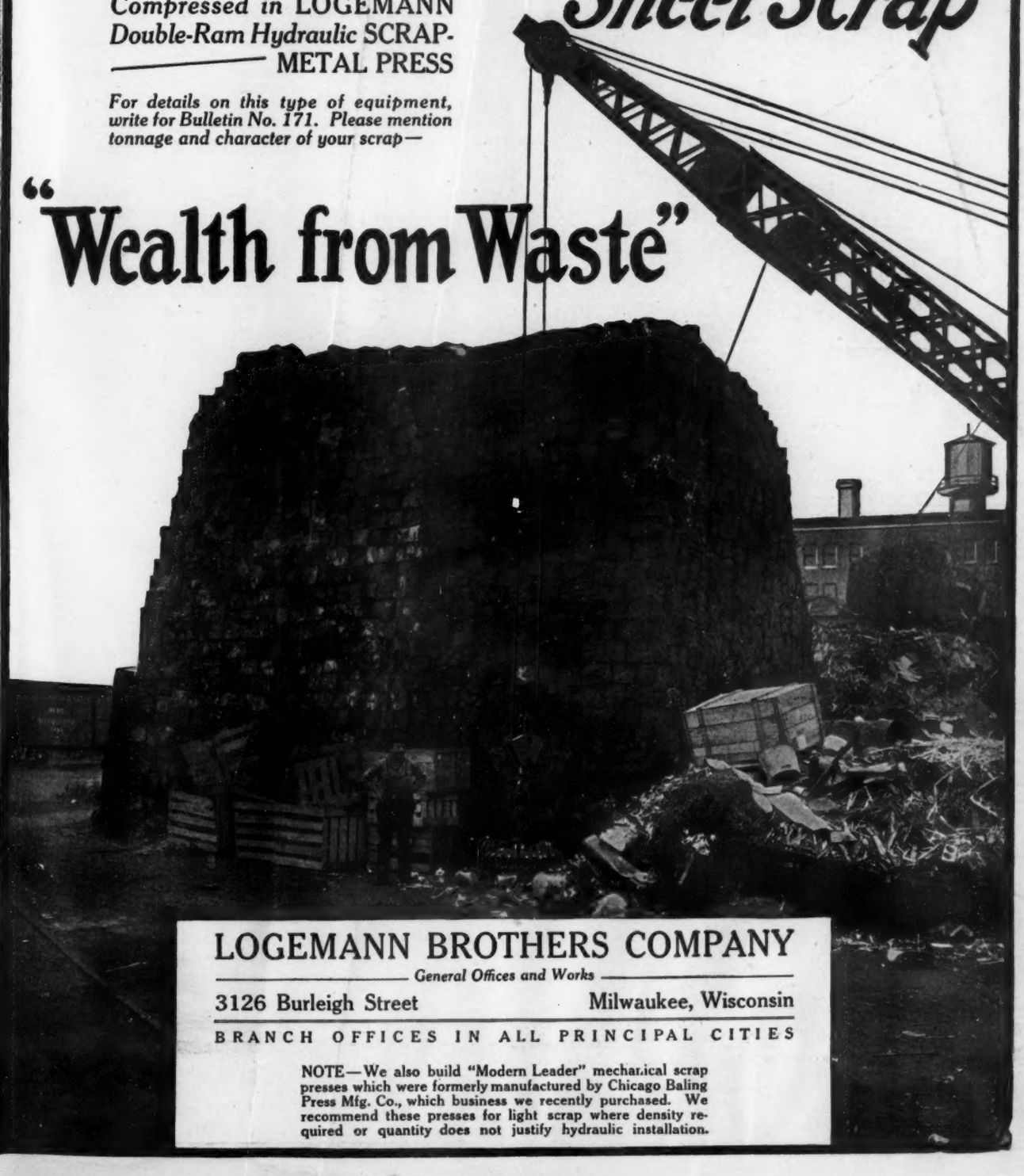
Chicago	17.50 to 18.00
Eastern Pennsylvania	18.00 to 19.00
Pittsburgh	21.50 to 22.00

Almost 2000 Tons - of "LOGEMANN HYDRAULIC-COMPRESSED" Sheet Scrap

Compressed in LOGEMANN *Double-Ram Hydraulic* SCRAP-METAL PRESS

For details on this type of equipment, write for Bulletin No. 171. Please mention tonnage and character of your scrap—

"Wealth from Waste"



LOGEMANN BROTHERS COMPANY

General Offices and Works

3126 Burleigh Street Milwaukee, Wisconsin

BRANCH OFFICES IN ALL PRINCIPAL CITIES

NOTE—We also build "Modern Leader" mechanical scrap presses which were formerly manufactured by Chicago Baling Press Mfg. Co., which business we recently purchased. We recommend these presses for light scrap where density required or quantity does not justify hydraulic installation.

Iron and Steel Prices

Nuts and Bolts

Hot pressed square tapped or blank .....$4.50 off list
Hot pressed hexagon tapped or blank .....5.00 off list
Cold punched square or hexagon blank .....4.50 off list
Cold punched square or hexagon tapped .....4.50 off list
Cold punched semifinished hexagon nuts ⅝-inch and larger ..75, 10, 10 and 5 off
Cold punched semifinished hexagon nuts 9/16-inch and smaller..30, 10, 10 and 5 off
Price f.o.b. Pittsburgh, packages or 50.

CARRIAGE BOLTS

(⅜ x 6", smaller and shorter)

Rolled thread .....60 and 10 off
Cut thread (all sizes) .....60 off

MACHINE BOLTS

(⅜ x 4", hot pressed nuts)

Rolled thread .....60 and 20 off
Cut thread (all sizes) .....60 and 10 off
(All sizes cold punched nuts)
Cut thread .....50, 10 and 5 off
Lag screws .....70 off
Plow bolts Nos. 1, 2 and 3 heads.. ..... 50 and 10 off
4 to 10 heads .....50-10 + 20 off
Flat and round head stove bolts .....80, 10 and 5 off
Other stove bolts .....80, 10 and 5 off
Tap bolts .....30 off
Bolt ends with hot pressed nuts .....60 and 10 off
Bolt ends with cold punched nuts .....50 and 10 off
Blank bolts .....65 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size) ....50 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000

	S. A. E. Castellated	U. S. S. Slotted
¼	$ 4.25	$ 4.25
5/16	4.90	4.90
⅜	5.90	6.25
7/16	7.50	8.50
½	9.75	10.00
9/16	13.25	13.50
⅝	16.25	16.50
¾	22.50	23.00
⅞	34.00	34.00
1	53.00	55.00
1⅛	85.00	85.00
1¼	120.00	125.00
1⅜	170.00	170.00
1½	200.00	200.00

Larger sizes—Prices on application.

Rivets

Structural rivets, C. L. Pitts.. 2.60c
Structural rivets L. C. L. Pittsburgh 2.65c
Rivets, 7/16-in. and smaller ..... 70, 10 and 5 off

Washers

Wrought .....$5.75 to $6.25 off
Lock washers .....80 off

Steel Pipe

(Effective April 19, 1923)

Pittsburgh basing discounts, jobbers' carloads.

Butt Beld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

Wrought Iron Pipe

(Effective Jan. 23, 1923)

Pittsburgh basing discounts, jobbers' carloads

THREADS AND COUPLINGS

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

Butt Weld

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
½-inch	+28	+40
1-inch	+34	+40
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

Boiler Tubes

L. C. L. discounts, C. L. 4 points larger

STEEL (Lap Welded)

(Effective April 19, 1923)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

CHARCOAL IRON

(Effective April 12, 1923)

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¼ to 4½-inch	5

SEAMLESS COLD DRAWN*

(Effective April 19, 1923)

1-inch	51 off
1¼ and 1½-inch	43 off
1¾-inch	27 off
2 and 2¼-inch	18 off
2½ and 2¾-inch	28 off
3 and 3¼-inch	32 off
3½ and 3¾-inch	33 off
4-inch	37 off
4½ and 5-inch	29 off

SEAMLESS HOT HOLLED*

3 and 3¼-inch	34 off
3½ and 3¾-inch	35 off
4-inch	39 off

SEAMLESS STEEL MERCHANT BOILER TUBES*

Extras:

Add $8 per net ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING*

Base Discounts

Carbon, 0.10 to 0.20 per cent	83 off
Carbon, 0.30 to 0.40 per cent	81 off
Carbon, 0.40 to 0.50 per cent	net price

Plus differentials and extras for cutting.

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES*

(Effective April 19, 1923)

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	15c
2-inch	12-gage	15c
2-inch	11-gage	16c
2-inch	10-gage	17c
2¼-inch	12-gage	17c
2¼-inch	11-gage	18c
2¼-inch	10-gage	20c
3-inch	7-gage	35c
1½-inch	9-gage	15c
5¾-inch	9-gage	55c
5½-inch	9-gage	57c

Plus usual extras for forming and for long lengths.

*Published discounts are subject to considerable shading, in some cases as much as three extra 5 per cents.

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$56.20 to 57.20
Six-inch and over, Chicago	52.20 to 53.20
Four-inch, Birmingham	49.00 to 50.00
Six-inch and over Birm'ham	45.00 to 46.00
Four-inch, New York	64.50 to 65.60
Six-inch and over, New York	59.50 to 60.60

Standard fittings, Birmingham, base..$110.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B.